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\*Illustrated.

The Lehigh Valley reports that at Catherine, N. Y., the town and the county authorities have joined in a request that the gates at a certain highway crossing be removed and an automatic signal installed instead; one of the audible-visible signals (enclosed disk) which are used extensively by this road, and were described in the *Railway Age Gazette* June 19, 1914. This signal, lighted by acetylene, shows white, night and day, when no train is approaching. The request will be complied with. What varied reasons may have actuated the minds of these public officers we do not know; but their reported opinion, that a signal which is "independent of the human element, and always on the job" is safer than gates, with an attendant, corresponds with that of a

well-known careful and conservative railroad officer who, from a thorough analysis of the grade crossing accidents on a large road, reached this conclusion some years ago. The installation of gates, of watchmen and of automatic signals is often governed so much by immediate expediency that science and logic seem to be of no account whatever. But the subject ought to be explored. The whole grade crossing problem bristles with difficulties, and this is only one of them; but the difference in cost between a watchman or gate attendant and an automatic signal is so great that in every case where the expense of keeping men on duty is not justified, all necessary means should be employed to convince the municipal authorities that such is the fact.

The "Equipment and Supplies" column in the general news department of the *Railway Age Gazette* is once more beginning to look like "good old times." In the issue of October 22 the column reported orders for no less than 90 locomotives, 6,800 freight cars and 74,500 tons of rails, making the third week in October the best

thus far this year, with the exception of the third week in May, when the Pennsylvania placed its order for 50 engines and 16,145 cars. But in the issue of October 29 the record of the week before was shaded into insignificance. There were reported orders for 177 locomotives, 12,889 cars (counting only the orders since confirmed) and 40,000 tons of rails, omitting the Pennsylvania's order for 175,000 tons of rails, which came to our attention but a few hours after the paper had gone to press. It is interesting to observe that the orders for new locomotives reported in these two issues of the paper had a total value of approximately \$8,000,000; for passenger cars, \$240,000; for freight cars, nearly \$20,000,000, and for rails (including the Pennsylvania's order), \$8,000,000; a total of \$36,000,000 in contracts for rails and new equipment awarded by the railways of this country in a short space of but two weeks. Records kept by this paper show that the orders for locomotives, for domestic service only, this year to October 29 totalled 1,005, as compared with 848 reported to the end of October, 1914; that the domestic orders for freight cars totalled 71,398, as compared with 67,820 up to October 30, last year, and what is most important, that for the first time in 1915 orders for locomotives and freight cars passed those of 1914 for a like number of weeks. The "Equipment and Supplies" column is beyond all doubt the best barometer of conditions in the railway supply trade field.

The use of the telephone for train despatching is constantly increasing, and bids fair to become universal throughout the country; but if anybody thinks the Morse telegraph is dead and out of date, he is mistaken. A note printed in this issue tells how the Pennsylvania Railroad gave a dinner party at Philadelphia for two of its Morse operators who took prizes at the San Francisco exposition. That, surely, is no sign that telegraphers are to be sent to the rear. Moreover, the increase in business just now is such that the Pennsylvania is hiring additional operators; and its school for station agents, at Bedford, Pa., which gives instruction in telegraphy and in other station-office work is still running, full blast, and looking for new pupils. A dinner may be a matter of sentiment; but hiring operators is cold business. The continued activity of this school is of interest, aside from any consideration of the technical differences between the telegraph and the telephone, in the evidence which it gives that the use of telephones is not to be made the occasion of a lowering of the grade of men (or women) to be employed for station work. It is not likely that the railroad company would be hiring many more telegraphers if satisfactory telephone operators could be hired at a much lower rate of pay. Looking only at the single task of sending and receiving messages or orders over the wire, the telephone makes it possible to use operators possessed of less intellectual ability than the telegraph requires; and in the first

### Morse Operators in Demand

days of telephone despatching this was suggested as a possible means of saving money. But, as every railroad man knows, a station agent ought to be a very versatile person; and the simplification of a single one of his many tasks affords no justification for reducing his pay. In a less degree the same is true of one who does nothing but handle messages. Ability as a telegrapher may indicate a better mentality than is necessary for speaking into a telephone; but it is a mentality none too high for the general duties of a station operator.

### SEVENTY YEARS YOUNG

**I**F the average ambitious young business or professional man of, say, 25 or 30 years, could determine what his career would be during the next 40 or 45 years, and what his position in life would be at the end of the time, he would be satisfied to determine that his career should be similar to Edward Payson Ripley's since he was 25 or 30, and that he should stand at 70 where Mr. Ripley stands now. Measured by every rational standard the Santa Fe's president at three score years and ten ranks among the most all-round successful men of his generation. The tribute paid by the dinner given him in Chicago last Saturday night on the occasion of his birthday was one of the most splendid ever received by any man and was as sincere and well-deserved as it was splendid.

Born in 1845, Mr. Ripley's life almost spans the history of railway transportation. Entering railway service 48 years ago, he has had his great difficulties to overcome and his hard battles to fight, but from then to now his progress in influence, in achievement and in reputation has been uninterrupted, so that to-day the prestige of his name and the authority of his wishes and opinions are greater than ever before. After a brief period of doubtful health a few years ago, he is again the very expression of hale robustness. Never did he have so many warm admirers and loving friends; never could he better enjoy a good book or a good game of golf. What more could any man ask for, much less hope for?

Our age and country are supposed to be addicted to commercialism. The American business man is often described as the personification of this spirit. The dinner to Mr. Ripley was attended by most of the leading railway men of this country and by many of the captains of industry and commerce in other lines. Everybody there knew that, measured by modern standards, Mr. Ripley is not a rich man. But nobody spoke or even thought of whether he is or not. He was honored as a business man who has demonstrated administrative efficiency of the highest order united to a disinterestedness which has caused him to think almost solely of how he could promote the interests of the investors who entrusted him with the management of their capital and of the public which his railway served. In other words, he was honored as one of the finest exemplars American industry has produced of that spirit of trusteeship which should dominate in the management of all large corporate enterprises, whether railways or industrial concerns. Mr. Ripley without his great ability would not stand where he does today. But neither would he stand there without the exalted sense of duty to his stockholders and bondholders and to the public, which he has always shown. And his possession and exemplification of the spirit of trusteeship have been as important elements in his career as his business capacity. With less ability and a less exalted sense of duty he might have made himself a much richer man, as many other men with less ability and a lower sense of duty have done. But while he would have been a richer man he would not have been so great a man. True greatness consists of character united to ability. Of the two elements character is very much the more important, and it was chiefly a tribute to character which was paid by those who gathered at the dinner to the head of the Santa Fe.

So long as even the business men of our country think so much more about how a business man serves others than about how he serves himself, it cannot truly be said that we are seriously dominated by commercialism. Probably in no other busi-

ness in this country do those engaged in it honor a man so little for serving himself and so much for serving others as in the railway business. That is the main reason why some railway men who have served themselves first and their stockholders and the public second are not in good repute among their fellows, while all railway men are uniting to do honor to the "Boss of the Santa Fe trail."

Mr. Ripley has achieved great things for those who have entrusted to him the management of their property. He has done far greater things for the public which their property serves. How much more he and the other great railway managers have done for the public than all the politicians, the legislatures and the commissions that have combined, in the name of the public, to impose restrictions and burdens on railway management!

### NEW CONDITIONS IN THE PASSENGER DEPARTMENT

**I**N another part of this issue is given an account of the proceedings of the special meeting of the American Association of Passenger Traffic Officers held at French Lick, Ind., on October 26. This was one of the most satisfactory meetings ever held by the association, from the standpoint of the business transacted and the clear understanding reached on many important questions of common interest, and it is believed that the foundation was laid for a much more efficient consideration at meetings in the future of the matters with which the organization deals.

There has been in the past a tendency in some quarters to regard these meetings of the passenger officers as junkets, devoted largely to speech-making and entertainment, and the fact that the association is not a legislative body, and therefore cannot itself enforce its conclusions, but can only recommend them to the various territorial passenger associations for action, has sometimes made it appear that little progress has been made by it. But the record of the association for important achievements is a long one, and there has been, especially in the past few years, a marked tendency toward a more businesslike handling of the docket at each meeting. Not only was the determination to stick to business until the program was completed made manifest at the French Lick meeting, but plans were adopted which seem to lay the foundation for securing more prompt action on the recommendations of the association, by the appointment of a general conference committee to follow the more important subjects through the territorial associations. Moreover, the reference to the executive committee of a proposal to curtail entertainment and speech-making at future meetings indicated a disposition on the part of the members to do more serious work.

As Vice-President Daly of the New York Central pointed out in his address, there can be no question that the passenger department is assuming a new dignity in many ways, and that passenger earnings are coming to be considered as a more important factor in both gross and net revenues. The passenger department has often been regarded largely as a mere adjunct of the freight business, and this, in addition to the difficulty of ascertaining much about the cost of the service, has led to the conducting of the passenger service on an extravagant basis and has sometimes prevented serious consideration of some of the most important problems connected with its work. The passenger business, as well as the freight business in some respects, is passing through a stage of transition from a condition brought about largely as the result of a period of excessive competition when rates were made by men whose main consideration was the gross revenue and who possessed very little knowledge of the subtrahend in the form of operating expenses.

The recent orders of the Interstate Commerce Commission providing for a separation of the operating expense between freight and passenger service, and the decision of the Supreme Court that each branch of the service must stand on its own legs, seem likely to lead to new conditions in the passenger side of the business, which may help to secure a better return from the passenger service as well as give passenger officers a better opportunity of knowing something about the expenses chargeable to their depart-



ment, and consequently more about the relation of both rates and expenses to the net results. Many passenger officers feel that the fact that a good passenger man usually must be a good mixer has sometimes prevented recognition of their more solid qualities and the more serious features of their work, and are therefore looking forward to the day when the new conditions will prevail, and when the business under their supervision may be lifted from the position of an expense to that of a net revenue producer.

The fact that regulation of rates has passed into the hands of another set of men who know even less about the expense accounts than the railroad men, however much they may pretend to give consideration to the cost of service, has by no means taken their work out of the hands of the passenger officers; and the circumstance that they have been trained to keep in touch with the needs and wants of the public has in many ways adapted them for the very important work of educating the public regarding the conditions in the railroad business.

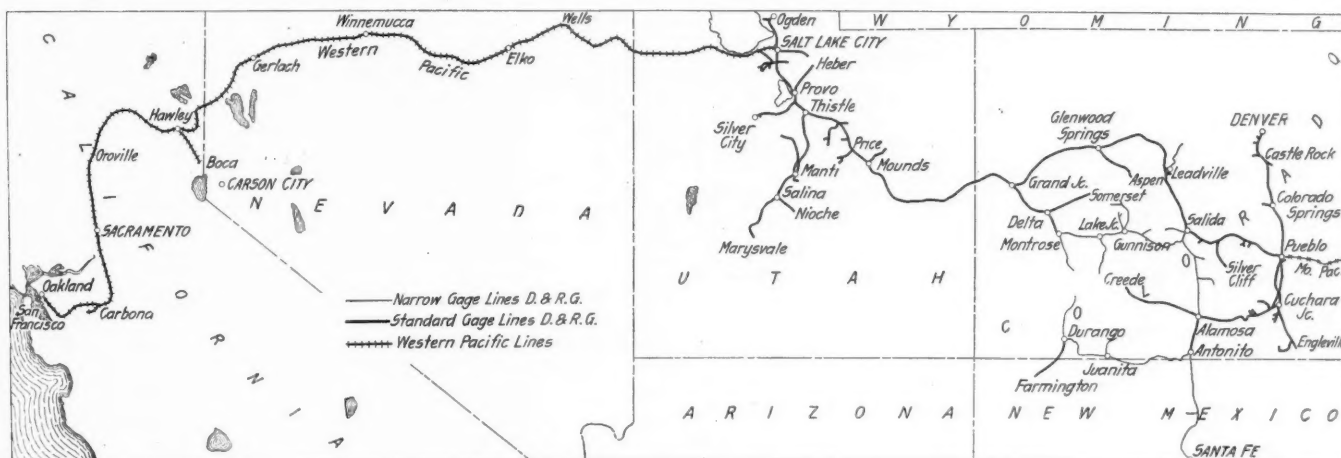
### DENVER & RIO GRANDE

**B. F. BUSH** is president of both the Denver & Rio Grande and the Missouri Pacific, and he is much too good a railroad man to let the physical condition of a property in his charge run down if there is any way of getting the money to spend on needed maintenance. The fact appears to be, however, that the Denver & Rio Grande simply did not have and could not

Total operating revenues for the Denver & Rio Grande in the fiscal year ended June 30, 1915, amounted to \$21,823,000, a decrease as compared with the previous year of \$1,770,000. Total operating expenses amounted to \$14,290,000, a decrease as compared with the previous year of \$2,171,000. After paying fixed charges the company had a surplus of \$935,000, as against \$1,056,000 in the previous year. Cash on hand at the beginning of the year amounted to \$2,607,000, and at the end of the year to \$2,693,000. Leaving aside adjustments through profit and loss account the disposition of the surplus is accounted for by an additional investment in road and equipment of \$559,000, and the retirement of \$501,000 of funded debt and equipment trust certificates.

The Denver & Rio Grande guarantees the interest and sinking fund payments, but not the principal, of the Western Pacific's \$50,000,000 first mortgage 5 per cent bonds. The Western Pacific could not meet the interest charges on these bonds that fell due March 1, nor was the Denver & Rio Grande able to advance the Western Pacific the money. A receiver was appointed for the Western Pacific on March 5, and negotiations are now going on before a committee representing Western Pacific bondholders and the Denver & Rio Grande looking toward some readjustment of the relations between these two companies.

The Denver & Rio Grande operates an average of 2,571 miles of road. At the end of the year 1,791 miles of road operated was standard gage, and 786 miles was narrow gage.



The Denver & Rio Grande and the Western Pacific

get the money which it needed in 1915 for ample maintenance expenses. Maintenance of way expenses per mile of road in the fiscal year ended June 30, 1915, averaged \$988, which was equivalent to a reduction as compared with the previous year's maintenance expenditures of more than 25 per cent. If it had been possible to save sufficient in transportation expenses to meet the loss in operating revenue we may well believe from Mr. Bush's previous record and the showing he is making on the Missouri Pacific that this would have been done. As it was, a saving of 14 per cent was made in transportation expenses, with a decrease of only 7.62 per cent in the total ton mileage carried, and 7.48 per cent in the total passenger mileage carried. The average train load of freight was increased from 390 tons in 1914 to 433 tons in 1915, a remarkably good showing.

Repairs to some classes of buildings were almost suspended, as, for instance, fuel stations, on which \$58,000 was spent for repairs in 1914, and but \$4,000 in 1915, and shops and engine houses, on which \$94,000 was spent in 1914, and but \$26,000 in 1915. There was a very large saving made in track laying and surfacing, on which \$699,000 was spent in 1915, a decrease as compared with the previous year of \$255,000. On the other hand, \$578,000 was spent for ties, a decrease of but \$98,000, and \$128,000 was spent for rails, an increase of about \$9,000.

It will always be an expensive property to operate, so large a part of its mileage being in the Rocky mountains with heavy grades and difficult operating conditions. On the other hand, a large proportion of its traffic is coal and ore, and it received a ton-mile rate—1.186 cents in 1915, and 1.201 cents in 1914. The total tonnage of freight carried in 1915 was 10,103,000, of which 3,307,000 tons, or 32.7 per cent, was bituminous coal, and 3,342,000 tons, or 33.1 per cent, precious ore. Products of agriculture in 1915 furnished 638,000 tons, or 6.3 per cent of the total tonnage. This was 44,000 tons more than in the previous year. The loss in ore tonnage amounted to 955,000 tons, or 22.2 per cent. This reflects the depressed conditions in the copper industry in the first nine months of the year. In the last three months of the fiscal year conditions began to improve, and since the close of the year conditions in the copper markets have very greatly improved. The great natural resources of Colorado have only begun to be tapped as yet. There are vast possibilities for cattle raising, fruit growing and agricultural development in the state, as well as the further development of its gold, silver and copper mines. In time probably also the Western Pacific will be the means of securing a certain amount of through traffic which it will handle in connection with the Denver & Rio Grande, but with the physical characteristics of the country through which it

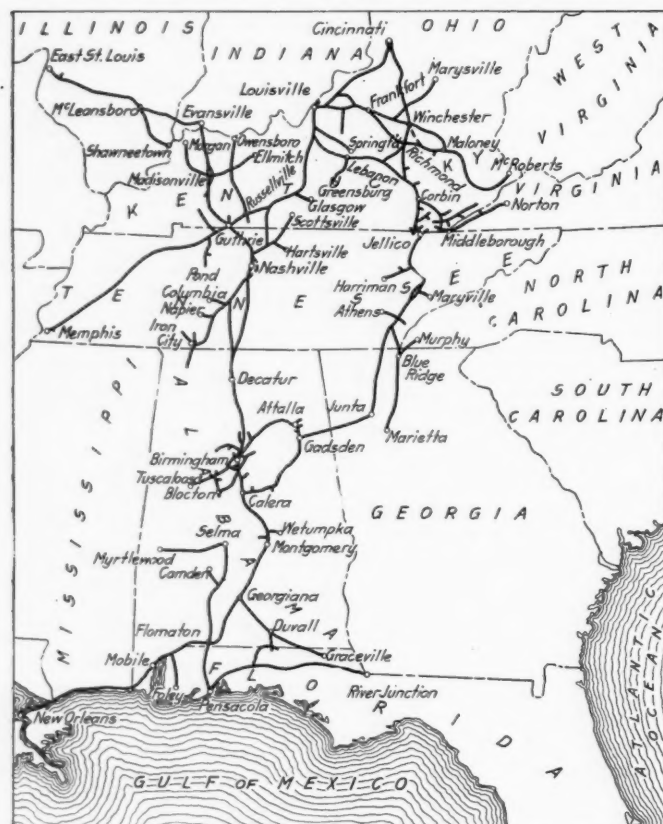
runs such as they are, and with the fact that the through business will have to be handled in competition with the Union Pacific, and therefore at rates which are low compared with what the Denver & Rio Grande can quite properly charge for its local traffic, it will probably be many years before the through business is very profitable.

The following table shows the principal figures for operation in 1915, as compared with 1914:

	1915	1914
Average mileage operated.....	2,571	2,583
Freight revenue .....	\$15,911,102	\$17,058,445
Passenger revenue .....	4,449,044	5,077,408
Total operating revenues.....	21,823,236	23,593,641
Maintenance of way and structures.....	2,541,539	3,406,852
Maintenance of equipment.....	3,992,351	4,318,512
Traffic expenses .....	477,425	497,431
Transportation expenses .....	6,290,955	7,311,843
Miscellaneous expenses .....	345,487	401,182
General expenses .....	651,215	585,069
Transportation for investment—Cr.....	9,302	60,320
Total operating expenses.....	14,289,671	16,460,569
Taxes .....	1,020,606	1,009,144
Operating income .....	6,511,607	6,123,564
Gross income .....	7,752,788	7,386,498
Net income .....	1,418,731	1,400,375
Appropriations for sinking funds and road and equipment .....	484,090	344,816
Surplus .....	934,640	1,055,559

### LOUISVILLE & NASHVILLE

**I**F good business judgment, success in meeting competition, conservative financing, success in opposing or preventing unreasonable regulation, and economical operation had been combined for all the railroads in the United States in the same degree that they are in the Louisville & Nashville, the railroad problem would now be less pressing and dangerous for investors, railroad



The Louisville & Nashville

men and the general public than it is. This is strikingly brought out in a year like the one ended June 30, 1915.

The Louisville & Nashville operates 7,607 miles of road. The revenue from freight forwarded from the principal cities served by the road decreased as compared with the previous year, as follows: Cincinnati, 24 per cent; Louisville, 24 per cent; Owensboro, 17 per cent; Evansville, 25 per cent; Henderson, 19 per cent;

St. Louis and East St. Louis, 30 per cent; New Orleans, 6 per cent; Mobile, 21 per cent; Pensacola, 16 per cent; Selma, 25 per cent; Montgomery, 22 per cent; Birmingham, 25 per cent; Nashville, 11 per cent; Knoxville, 18 per cent. There was a loss of \$8,300,000, or 13.85 per cent, in operating revenues as compared with the previous year, the total operating revenues in 1915 amounting to \$51,606,000, or the smallest revenue since 1909. Operating expenses amounted to \$39,432,000 and net operating revenue to \$12,174,000, the smallest since 1908. After the payment of interest charges and rentals in 1915 the company had \$4,860,000 available for dividends. It paid 5 per cent on its \$72,000,000 stock, calling for \$3,600,000, and had, therefore, even in such a year of depression as 1915, a fair margin of safety. In 1914 there was \$6,645,000 surplus available for dividends and the company paid 7 per cent on its stock calling for \$5,040,000. Thus, in an average year the owners of the property paid the interest on the borrowed money put into it, took a profit of 7 per cent on the face value of their own investment, and invested in the property some additional capital in the form of surplus. In a bad year they cut expenses, took 5 per cent instead of 7 per cent profit, and maintained the policy of putting additional capital into the property in the form of surplus.

Total operating expenses in 1915 amounted to \$39,432,000, a decrease as compared with the previous year of \$5,551,000. Transportation expenses in 1915 amounted to \$17,450,000\* and in 1914 to \$20,638,000, a decrease of \$3,188,000. The total number of passengers carried one mile was 499,879,000 in 1915, as compared with 577,421,000 in the previous year, or a decrease of 13.43 per cent. Passenger-train mileage amounted to 10,352,000 in 1915, a decrease of 2.79 per cent, as compared with the previous year. By far the greater part of the \$3,188,000 saving in transportation expenses was made, therefore, in freight service. The total ton mileage carried amounted to 5,144,000,000 in 1915, as against 5,512,000,000 in the previous year, a decrease of 6.67 per cent. The mileage run by revenue freight trains amounted to 14,162,000 in 1915, as against 18,004,000 in 1914, or a decrease of 21.34 per cent. The average trainload was 347 tons in 1915, as against 297 tons in the previous year, an increase of 17.16 per cent. This is a showing that the operating department may well be congratulated on. It is remarkably good.

The Louisville & Nashville divides its expenses between freight and passenger service. On the basis of this division the expenses per revenue train mile in freight service were 191.89 cents, comparing with 179.47 cents in the previous year, an increase of 6.92 per cent, as compared with an increase of 17.16 per cent in tonnage per train mile. In other words, the expense per ton per mile was reduced from 0.605 cents in 1914 to 0.553 cents in 1915, or by 8.60 per cent. The expenses per passenger-train mile were 99.99 cents in 1915, as compared with 101.60 cents in 1914, a decrease of 1.58 per cent.

It is interesting to note that the earnings per passenger-train mile in 1915 were \$1.21, and of freight, \$2.50, while expenses were 100 cents in passenger service and \$1.92 in freight service, leaving a net per train mile of 21 cents in passenger service and of 58 cents in freight service.

The company increased its funded debt outstanding in the hands of the public approximately \$6,000,000, by the sale of \$7,500,000 Lexington & Eastern first mortgage 5 per cent bonds and the retirement of various small amounts of bonds and equipment trust certificates. Approximately \$2,706,000 was spent for additions and betterment to road and \$2,019,000 for additions to equipment. The company had on hand at the end of the year \$9,894,000 cash and \$4,156,000 time drafts and deposits. At the beginning of the year there was \$13,710,000 cash, with no time drafts and deposits. There are no accounts and bills payable.

The Louisville & Nashville has been one of the very few railroad companies to charge depreciation on its road as well as on its equipment. The Interstate Commerce Commission rules for accounting have permitted such a charge ever since 1907 and

\* The 1915 figures are in accordance with the new classification and the 1914 figures are not revised, but the totals for general accounts, such as transportation, are comparable.



now specifically provide for such a charge, but do not require it. The Louisville & Nashville had up to June 30, 1915, accrued \$10,718,000 depreciation on its road, which stands on its books at a cost of \$191,498,000, and had accrued \$18,684,000 on equipment, which stands on the books at a cost of \$54,522,000. This is very liberal depreciation. No one would question the soundness of this kind of accounting in a private business, and if a company is strong enough to do so, it would seem the sound method of procedure for a railroad corporation.

In the complaints against rates charged by the Louisville & Nashville brought before the Interstate Commerce Commission the commissioners themselves would probably acknowledge that the company was better able to defend its rates than the majority of other railroad companies, which is a convincing argument that the Louisville & Nashville is not charging excessive rates. Its shippers and the traveling public served by the road are, as a matter of fact, getting better service than would be possible if the company was not as financially strong as it is. The \$7,500,000 bonds were sold at a total discount of \$394,000, so that the railroad company secured new capital on about the same basis as the combined governments of England and France.

The following table shows the principal figures for operation in 1915, as compared with 1914:

	1915	1914
Mileage operated .....	7,607	7,507
Freight revenue .....	\$36,953,794	\$42,868,078
Passenger revenue .....	10,859,047	13,082,509
Total operating revenue .....	51,606,015	59,682,778
Maint. of way and structures .....	8,993,389	9,323,206
Maintenance of equipment .....	10,310,563	12,239,795
Traffic expenses .....	1,349,705	1,334,264
Transportation expenses .....	17,449,812	20,638,428
Miscellaneous expenses .....	212,660	
General expenses .....	1,249,517	1,247,015
Transportation for investment—Cr. ....	133,857	
Total operating expenses .....	39,431,789	44,782,708
Taxes .....	2,136,713	2,600,288
Operating income .....	10,031,448	12,288,155
Gross income .....	13,461,044	15,176,142
Net income .....	4,951,764	7,050,139
Appropriations .....	91,622	405,275
Dividends .....	3,600,000	5,040,000
Surplus .....	1,260,142	1,604,864

#### DETROIT, TOLEDO & Ironton

A NEW company on March 1, 1914, took over the Detroit, Toledo & Ironton from the reorganization committee which had bought the road under foreclosure sale. The first annual report of the company is for the fiscal year ended June 30, 1915. Under the reorganization \$8,000,000 adjustment mortgage 5 per cent bonds were issued, on which interest charges up to January 1, 1919, are conditional on earnings. A first mortgage was placed on the property to secure an authorized issue of \$1,000,000 5 per cent bonds, of which \$950,000 were sold to raise money for the rehabilitation of the property. In the fiscal year ended June 30, 1915, the company fell short by \$132,000 of earning its operating expenses and the interest on these first mortgage bonds.

A change of policy, however, was adopted in December, which it is thought will greatly increase net earnings. The company cancelled all its tariffs on coal and coke tonnage which provided for hauling this freight at less than three mills per ton per mile. The new management's analysis of the situation was that by accepting coal at rates which yielded from two to three mills per ton per mile the road had to handle traffic that was unremunerative, and through congesting the road in September, October, November and December, when the greatest movement of other freight occurred, it made operation so expensive as to preclude the possibility of a reasonable operating ratio in the months of heaviest traffic. The experiment is a particularly interesting one.

The Detroit, Toledo & Ironton operates 441 miles of road, of which 344 miles is main single track, from Detroit to Ironton. From Ironton to the Kenova bridge across the Ohio river is the main line of the Norfolk & Western. Kenova is on the main line of the Chesapeake & Ohio, a short distance west of the

junction of the Elkhorn branch of the Chesapeake & Ohio with the main line. The Elkhorn branch at its southern extremity connects with the newly built extension of the Carolina, Clinchfield & Ohio. There is a route, therefore, from the Great Lakes to Charleston, S. C., on the southeastern seaboard. From the map which the Detroit, Toledo & Ohio includes with its first annual report it would appear that the company intends to make a bid for traffic over this route. A very early project in railroad planning in this country was for a so-called three C's route from Charleston to Chicago via Cincinnati. The difficulties of getting over the Blue Ridge and Allegheny mountains were so great that this early project was never carried out. The Clinchfield overcame these difficulties and such a route is now open. It would seem as if there were possibilities of developing a traffic in manufactures and merchandise southbound and in fruit and vegetables northbound over the route made by the Clinchfield and the Detroit, Toledo & Ironton.

Heretofore 56 per cent of the total tonnage carried by the Detroit, Toledo & Ironton has been products of mines, and a large proportion of this has been coal, on which the company got but a very meagre ton mile rate. The total tonnage of all classes of commodities carried in 1915 was 2,449,000, and of this, 30 per cent was manufactures as compared with 23 per cent in 1914. The freight density (ton miles per mile of road) in 1915 was 796,000 tons. The average trainload of freight was 477 tons in 1915 and 439 tons in 1914. The total operating revenue per mile of road was \$4,005 in 1915, comparing with \$3,431 in 1914. If the operation of the road is ever to prove profitable to its stockholders it will have to earn very much more than \$4,000 a mile. The present management, however, believes that the way to increase the earnings per mile is not to make a bid for traffic at any price, but to refuse traffic which cannot be handled at some margin of profit and to try to develop, through service and otherwise, other classes of traffic which will yield a margin of profit.

A comparison is made in the annual report of the company for the fiscal year ended June 30, 1915, between the operation in the last four months and the first eight months of that fiscal year. In the last four months the coal and coke tariffs which were considered unprofitable had been canceled. The revenue from coal and coke was \$77,000, or 16 per cent of the total revenue for the four months, whereas in the eight months previous the revenue from coal and coke had been \$522,000, or 41 per cent of the total revenue for that period. Other freight revenue in the four months amounted to \$336,000, or 69 per cent of the total revenue, and in the eight months to \$561,000, or 44 per cent of the total revenue. During the four months operating expenses amounted to \$400,000, or an operating ratio of 82 per cent, while in the eight months operating expenses amounted to \$1,233,000, or an operating ratio of 96 per cent. Thus, in the four months there was \$89,000 net operating revenue, while in the eight months there was but \$47,000 net.

Whether or not the management's diagnosis of the situation is correct cannot be definitely decided until two entire years of operation, one under the old system and one under the new, can be compared. All the indications are, from the twelve months' figures which are given, that the management is right.

The following table shows the principal figures for operation in 1915. No figures for 1914 are given because there are no directly comparable figures which are available:

	1915
Mileage operated .....	441
Coal and coke revenue .....	\$599,216
Other freight revenue .....	897,030
Passenger revenue .....	161,386
Total operating revenues .....	1,767,580
Maintenance of way and structures .....	231,830
Maintenance of equipment .....	275,478
Traffic expenses .....	45,407
Transportation expenses .....	1,009,288
General expenses .....	69,442
Total operating expenses .....	1,631,443
Taxes .....	58,200
Operating income .....	77,906
Gross income .....	123,887
Deficit .....	132,134

## Letters to the Editor

### SUPERHEATER LOCOMOTIVES AND GRADE REVISION

CHICAGO, ILL.

TO THE EDITOR OF THE RAILWAY AGE GAZETTE:

In your issue of October 8, 1915, page 637, I note a letter by M. E., in which he expresses some doubts as to the ability of a practical man to assimilate some of the statements made in my article on "Superheater Locomotives and Grade Revision" in your issue of September 10, 1915, page 469. I am afraid that the practical man has not applied his practical knowledge to the case in point. The first thing I notice is the diagram on page 637. In this diagram the ordinates are spaced for "Tractive effort—pounds." The A. R. E. A. curves are taken from the tables on pages 469 and 470 of my article above referred to. These two tables show the *drawbar-pull*, the drawbar being at the rear of the tender. This is not tractive power at all, as subtractions have been made for the different kinds of friction usually found in the practical operation of a locomotive.

Another important feature of these figures seems to have been overlooked. These curves are only applicable to the locomotive under the condition of firing given. For the information of those interested in methods of calculation it may be stated that they are based on actual tests, the figures for the saturated steam locomotive being based on the tests made at the St. Louis World's Fair and those for the superheater being based on tests made at the Pennsylvania Railroad's testing plant at Altoona. The only assumption that has been made is that a pound of coal will evaporate a certain number of pounds of water when the grate areas and heating surfaces have a given ratio, this factor being ascertained by the tests cited. It has been found in the Altoona tests that a pound of coal will generate about the same weight of saturated and superheated (200 deg.) steam. However, the weights for a given volume are different. The basis I have used is coal consumption, the same amount of 11,000 b. t. u. coal being used per hour on each locomotive.\*

The saturated steam locomotive will have to shorten its cut-off at 5 m. p. h., but the superheated steam will fill the cylinders at 8 m. p. h. At 5 m. p. h. for the saturated steam and 8 m. p. h. for the superheated steam, the two should have the same drawbar-pull. Each curve then follows laws of its own; the superheated steam being more nearly a perfect gas, the drawbar-pull does not decrease as rapidly. As to the difference between the two at 5 m. p. h., I do not know where "M. E." gets his figures. He finds a difference of 3,966 lbs. tractive power. The difference shown by Tables I and II in my article is 966 lbs. drawbar-pull. I am unable to say where the 3,000 lb. came from and must plead not guilty; 966 lb. drawbar-pull is a very small difference, and I very much doubt if any of our eagle-eyed practical men would be able to find it in actual operation. Apparently it is due to the superior "fluidity" of the superheated steam. In the calculation given the difference between the hauling capacity of the two locomotives on a 0.5 per cent grade at 5 m. p. h. is only 62 gross tons.

The A. L. C. curve plotted with these curves is misleading without an explanation. These two curves show the drawbar-pull of a saturated and superheated steam locomotive of the same drawbar horsepower up to 20 m. p. h. This simply means that less coal is fired per hour for the superheater than for the saturated steam locomotive. I have made an entirely different assumption, that is, that they both use the same amount of coal per hour, this amount being about the capacity of a good fireman. There will be a saving per gross ton mile but not per hour. The boiler horsepower of a saturated steam locomotive can be increased say 30 per cent, by adding a superheater, if the

heating surface is not lessened, and the same amount of coal is fired per hour. Operating conditions may be such that the old locomotive was powerful enough. In that case a large saving in fuel will be shown. In other cases the trains will be loaded heavier and faster time made. In this case the saving will be partly in fuel and partly in other operating expenses. A case is conceivable in which a line may be so congested that the extra power will be used entirely for speed and there will be no saving in fuel. However, there will be a saving elsewhere, probably in overtime.

"M. E." uses the following language: "At this speed the A. R. E. A. curve for *tractive effort* for a saturated steam locomotive shows 5,762 lb. From a practical point of view such figures will not substantiate service requirement." I agree with him exactly, but in no place have I used the term "tractive effort." The *drawbar-pull* is 5,672 lb. In the eastern territory with 15,000 B. t. u. coal this would be about 7,700 lb. In the first case  $5,672 \div 5.4 = 1,051$  tons behind tender would be the tonnage, and in the second case  $7,700 \div 5.4 = 1,425$  tons behind tender would be the tonnage at 35 m. p. h. maintained speed on a level grade and not the 323 tons given by "M. E."

This gets us around to the point of train resistance per gross ton for different average weights of car. "M. E." states that very few support the theory that train resistance does not increase between 4 and 30 m. p. h. I have seen votes taken where it was unanimously decided that it did not increase—also the reverse. As a matter of fact, this depends largely upon the kind of track. With 100 lb. rail the increase will not start until a higher speed is reached than for light rail and track. I have seen dynamometer records that ran as low as 4 lb.; others as high as 8 lb. In this problem I took the highest grade track. If "M. E." will plot a large number of points showing this data taken from dynamometer charts, he will have them spread over an area so large that it would not seem worth while to put a curve through them, although it can be done mathematically. The principal thing to do to get comparable figures is to get similar conditions. "M. E." also inquires, "Also in the case of time freight trains, do such theoretical calculations bear out practical service runs?" Page 469 of my article limited the calculations to slow freight. "Such theoretical calculations" may be made for time freight and may be expected to give correct results if the theory is understood and applied correctly.

In conclusion, I wish to disclaim any intention of asserting that there is any such thing as general economics in cases of this kind. Engine districts vary widely, and figures made for one have no relation to figures made for another. The same method may be used, however, and this is the question of greatest importance. Calculations of the sort which I have gone into only expect to get at a yearly average. Daily runs and similar special cases may be above or below the figures given. Some seem to object to "theoretical" computations in matters of this sort. There can be no other when one line has not been built. When a railroad finds that it cannot do business economically over an engine district it is going to do something about it if it has the money. That any calculations made are not infallible is well known, but it has always seemed to me that the correct point for a start in such matters is the locomotive. The whole district must be considered and not one or two grades.

PAUL M. LABACH.

THE PROGRESS OF THE AUSTRALIAN TRANSCONTINENTAL RAILWAY.—In a recent debate in the Victoria parliament on the Kalgoorlie to Port Augustus Railway Loan Bill, the minister for home affairs remarked that he had been informed that the railway would be opened for traffic by the end of next year. Up to July 17 between 700 and 800 miles of track had been laid out of the total length of 1,053 miles. Rails weighing 80 lb. per yard were being used, and the scheme allowed for a speed of 30 miles per hour, the curves and general characteristics of the railway permitting this speed.

\* The curve marked A. L. C., shown by "M. E.," seems to have been made for 5,500 lb. of coal per hour. The B. t. u. apparently is taken at about 14,000.



# Dinner to E. P. Ripley on Seventieth Birthday

Three Hundred Railroad Men and Other Associates Honor  
Santa Fe President After Twenty Years in Its Service

One of the most remarkable tributes ever paid to a man by his friends, associates and competitors was the dinner to Edward Payson Ripley, president of the Atchison, Topeka & Santa Fe, on the occasion of his seventieth birthday, which also marked for him the completion of 20 years as the head of the Santa Fe system.

The dinner was given by the officers and the directors of the company, at the Blackstone hotel, Chicago, on October 30, and was attended by over 300 personal friends, railroad men and other business associates of Mr. Ripley, including 200 Santa Fe men from all parts of the system, some of whom had been connected with the road throughout its history, and nearly all of the most prominent railway officers of the United States.

The banquet hall was decorated with flowers, foliage and fruits representing the products of the 13 states through which the Santa Fe system runs. An entire refrigerator car was required to transport them to Chicago. One of the most striking features of the decorations was a large Santa Fe emblem in electric lights, the mission cross, bearing the words, "Santa Fe," which vanished and were replaced by "Ripley."

Reverend Bernard Kelly, of Topeka, an old friend of Mr. Ripley, delivered the invocation at the dinner. The speakers were: Charles S. Gleed, president of the Missouri & Kansas Telephone Company; Victor Morawetz, formerly general counsel and chairman of the executive committee of the Santa Fe; George B. Harris, chairman of the Chicago, Burlington & Quincy; Frank Trumbull, chairman of the Missouri, Kansas & Texas, and the Chesapeake & Ohio; Gardiner Lathrop, general solicitor of the Santa Fe, and Mr. Ripley.

Walker D. Hines, general counsel of the Atchison, Topeka & Santa Fe, presided as toastmaster. In introducing the first speaker, he referred to the electric light emblem, saying:

"When we speak of Mr. Ripley, we think of the Santa Fe, and when we speak of the Santa Fe, we think of Mr. Ripley. The two names seem almost interchangeable. The identity is so complete that we are almost disposed to assume that Mr. Ripley was born president of the Santa Fe, but such is not the case.

"Mr. Ripley was born and educated in Dorchester, Massachusetts, and then he worked four years in a wholesale dry goods house in Boston. At the age of 23, he began his railroad service, and for two years he was contracting agent for the fast freight line of the Pennsylvania System. Then he spent 20 years in the

service of the Burlington. He began as a clerk in the general eastern agent's office at Boston, later becoming general eastern agent. Then he became general freight agent, then traffic manager, and then the all-around qualities of his railroad capacity received a very striking recognition, for although all his training had been in the traffic department, he was transferred to the operating department and made general manager. In 1890 he left the Burlington and went to the St. Paul as third vice-president, in charge of traffic, and stayed there until January 1, 1896. Then began the presidency of the Santa Fe. At that time he had lived in Chicago for 18 years and he had been in the railroad business 28 years. He knew the traffic end and the operating end, and he knew the West.

"I want you now to hear what the Santa Fe's experience was before it came with Mr. Ripley. The best qualified man in the country to tell you that is my fellow-director Charles S. Gleed, of Topeka, Kan."

Mr. Gleed spoke on the subject, "The Old Santa Fe and the New," comparing the present situation of the road with the conditions that existed before the receivership.

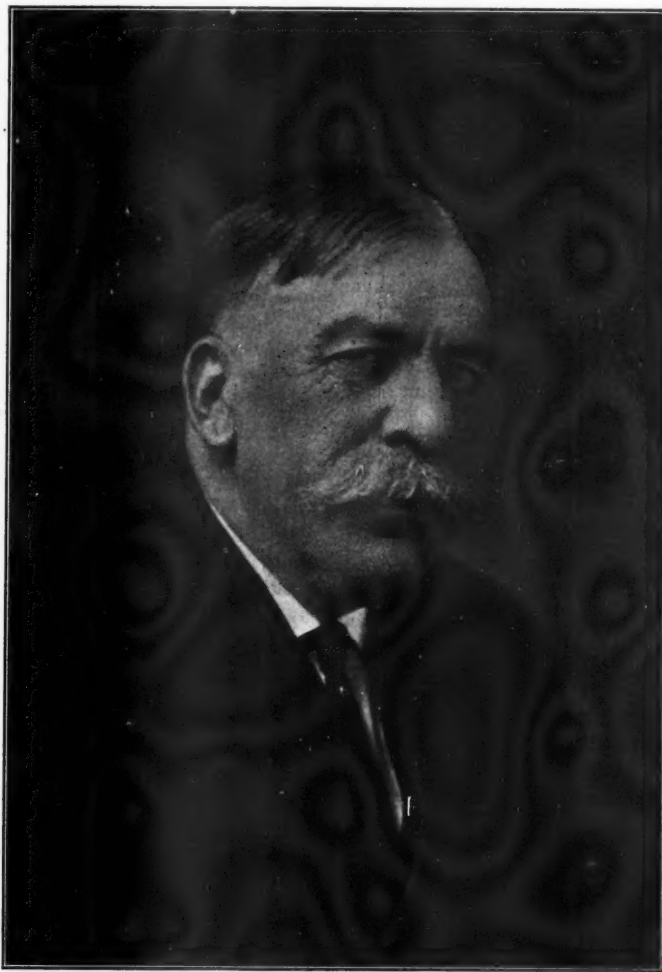
Mr. Hines then introduced Victor Morawetz, stating he was the most active man in the reorganization of the Santa Fe, and that during the formative period of the new Santa Fe he was Mr. Ripley's most intimate associate in the financial management of the company. Mr. Morawetz spoke on the problems confronting the property when Mr. Ripley took charge of it and on the policies which Mr. Ripley put into effect, saying in part:

VICTOR MORAWETZ ON THE RE-  
ORGANIZATION OF THE  
SANTA FE

It is difficult at this time to realize the hopeless depression in business and the despondency in financial circles which prevailed at the time of the reorganization of the Santa Fe

system in 1895. It was only through the assistance of Messrs. Baring Brothers & Company, of London, that it became possible to form a syndicate to underwrite the payment.

It is small wonder, therefore, that the reorganization committee failed to foresee the great future of the Santa Fe system and to make adequate provision for its future capital requirements. For a number of years after the reorganization the work of reconstruction was seriously handicapped, because the only securities the company could sell were its general mortgage bonds, and the amount of these that could be issued was wholly insufficient. It was only after the commencement of the period of unparalleled and nation-wide business prosperity about



E. P. Ripley

15 years ago that the company's credit became sufficiently established to enable it thereafter to raise the new capital that was needed by the sale of debentures, convertible bonds and bonds secured by newly constructed lines.

All the railroad reorganizations planned at the time of the Santa Fe reorganization, and nearly all the reorganizations ever planned in the United States, have been faulty because they failed to make adequate provision for future capital requirements. Rarely if ever have railroad reorganizers realized the abounding vitality and the unceasing growth of the country and rarely have they appreciated sufficiently that in the United States a railway system must develop and grow with the country which it serves—that it must ever expand its capacity and improve its service.

Undoubtedly there will recur temporary periods of depression during which railroad earnings will fall off and railroad companies will find it impracticable to raise the new capital which they need. But, even during these periods of depression, population increases, the development of the country proceeds and wealth accumulates, and we know from experience that after each period of depression the prosperity of the country and the demand for additional railway facilities grow by leaps and bounds. Every railroad system, therefore, must be prepared, from time to time, to raise large amounts of new capital to enable it to furnish the additional facilities which the development of the country demands. It is, however, obvious—as obvious as a church by daylight—that in the long run neither the Santa Fe company, nor any other railway company in the United States, will be able to raise the necessary new capital, unless investors in securities feel assured that railroad companies will be permitted by the governmental authorities to charge for their services enough to enable them to pay the increasing costs of labor and of materials, and also to pay a satisfactory return to the holders of their bonds and stocks. Mr. Ripley has built up and perfected a railway system that serves the country well; but whether his work shall endure and in future years the Santa Fe system shall continue to serve the needs of the country will depend on the policy which the people may adopt and enforce through their railroad commissions.

When Mr. Ripley took charge of the Santa Fe system his first task was to improve the physical condition of the road and equipment as fast as the means at his disposal permitted. The Santa Fe soon became one of the leaders in the introduction of the latest improvements of equipment and machinery and generally in scientific railway management.

The results were due not only to Mr. Ripley's exceptional ability and sound judgment as a railway manager, but also to his rigid enforcement of those elementary principles which are essential to enduring success in the management of any business. By rule and by example he enforced the principle that no officer should have any interest that might be antagonistic to the interests of the company and that all should co-operate with single-mindedness of purpose to secure the ultimate welfare of the company, without regard to any outside interest or influence. It was his view also that the finances of a great railway system should be managed with the utmost conservatism and regard for the safety of its security holders.

Mr. Ripley has done more than to build up a strong and prosperous railway system. He has helped to develop and enrich a large section of the country and, by his influence and his example, he has helped to extend sound and business-like methods of railway management throughout the United States.

Mr. Hines then introduced George B. Harris, who had been long associated with Mr. Ripley when both were on the Burlington and who was president of the Burlington during much of the time that Mr. Ripley has been president of the Santa Fe. Mr. Harris spoke on Mr. Ripley's relations with the presidents of other railroads, praising his fairness in his relations to his competitors.

Frank Trumbull was asked to speak particularly with reference to the public aspects of railroad problems and Mr. Ripley's relation thereto. After paying a tribute to Mr. Ripley, he said:

#### FRANK TRUMBULL ON RAILROAD REGULATION

The railroads of the United States as a whole are regulated by forty-nine interlocking directors—forty-eight states and the federal government. Freight cars go everywhere, shippers determine the routing of their freight; the Interstate Commerce Commission can determine divisions of through rates, and if the railroads of Texas, for example, be crippled, there is impairment and waste not only in Texas, but in every state.

Omitting figures, but stating facts, what is the situation of the railroads of the country, considered as a whole? Their net operating income for the fiscal year ended June 30, 1915, was not as great as in 1910, 1911 or 1912, and the loss in comparison with 1913 was even greater. There are now abundant crops and various signs of returning prosperity, but who shall say whether this is permanent or only hectic?

In the last four years probably not less than fifteen hundred million dollars have been dedicated by private investors to the public service in the form of additional railroad property, but the net operating income of the railroads has been diminished. Is it any wonder that the investor feels that he may continually be in a dentist's chair, and that there is practically no appetite for fresh railroad development, particularly at a time when investors can get high rates of interest and big profits otherwise? If fifteen hundred million dollars have been required during years of restricted business, why not that much or more in the years that are immediately ahead of us—years of possibly greatly increased traffic? Where is the reserve preparation for it? May not the shippers, while saving in rates, have risked their profits? I do not argue the question of government ownership. Government has owned the wagon roads of this country for three hundred years and they are sufficient answer. It would be interesting, would it not, to have a governmental valuation of the wagon roads showing, as in the case of the railroads, the original cost to date, the cost of reproduction, etc.

Many sincere and honest citizens ask why should not the railroads accept the same vicissitudes as general business. This is a proper question to ask and a proper one to answer. Government puts limitations upon the prices which railroads may charge and requires them to remain in business every day in the year whether or no. These are the two important features which differentiate the railway business from other business of the country. France has long since recognized this by guaranteeing to railroad owners minimum regional dividends. Great Britain has recently recognized it in temporarily taking over the management of its railways, by guaranteeing to their owners returns equal to those prior to the war. Is not security of investment as desirable for the peaceful development of a people as for war? Under present conditions, investors take all the risk of the ordinary fluctuations of business and the risk of contradictory and confusing regulation besides. And that, of course, means pure, unadulterated speculation.

I make no protest against regulation of railroads by public authority. Wise regulation is in the public interest, but if regulation is to be successful it must be responsible; it must be consistent; it must provide some sort of assurance to future investors as to treatment which they will receive. If the treatment is niggardly, even in a few states, railroad investment will be restricted. If the treatment is liberal, railroad investment and enterprise will be stimulated. The fundamental weakness of the present situation is that by reason of the inconsistency, the complexity, and often the contradictions, involved in the present system of regulation, the railroad officer cannot make any promises as to the treatment which investors in his property will receive. That is a difficult position in which to put any conscientious man, seeking additional capital. Again, no matter how well or satisfactorily the Interstate Commerce Commission may do its work, the entire fabric can be disarranged through counteracting influences of state commissions and legislative bodies.

In introducing Gardiner Lathrop, Mr. Hines said:

"The railroads have become a national institution and it is of vital importance to the public that the whole scheme of government regulation should be studied and overhauled.



When the time comes to do this I believe the public will realize the importance of giving careful consideration to the views of men like Mr. Ripley. It is inconceivable that the advice of men with such qualifications will be rejected in any public study of railroad matters. It may be said that the advice of railroad men is impaired by their self-interest, but I deny that any class in our country has a more direct or a more comprehensive interest in the successful rendition of public transportation service than the railroad men themselves. So I believe that one of the greatest functions of Mr. Ripley's career is still before him, and that is to aid in the improvement of governmental regulation.

"But now we come to the relationship which, though last in our arrangement here, is first and fundamental. It is where all of Mr. Ripley's great qualities appear the greatest and all his lovable qualities appear the most lovable, and that is his relationship with his officers and his employees."

An abstract of Mr. Lathrop's address follows:

#### GARDINER LATHROP ON RELATIONS WITH EMPLOYEES

It is my privilege tonight to speak of Mr. Ripley's relations to his employees, including officers in that good generic term. To his officers he has always given the fullest measure of confidence, the largest power of initiative and the greatest independence of action, at the same time holding them to the strictest accountability for the proper performance of their duties, and subjecting them to just but kindly criticism whenever the occasion demands it. Conferences upon matters of importance are invited and counsel freely furnished from the storehouse of a mind which, after years of study and experience, has become master of every department of railway service.

His dominant characteristics in dealing with his employees are justice and fairness, and like all big men he is plain in manner, easy of approach and always accessible, ready to hear and to heed what any employee, no matter what his position, may have to say. Every man is assured of fair treatment, and, if deserving, he receives promotion in the line of service. Not long ago the chief executive of another system wrote Mr. Ripley to suggest a man for vice-president. Mr. Ripley replied that he found his vice-presidents among his own employees and that his correspondent should do the same, thus rewarding good service and furnishing an incentive to all employees to do their work faithfully, in the knowledge that when their time comes they will be recognized.

It has been his policy, not only to guard the lives and limbs of the men under him by the promulgation of all necessary rules and the adoption of all safety devices of value, and the creation of a separate department to have this matter of safety in special charge, but also to foster a comprehensive hospital system, the support and management of which are participated in by both employees and officers.

In addition to this, the company several years ago, at his instance, established a pension system, being a pioneer in providing for a liberal minimum, whereby faithful employees, grown grey in the service, are enabled to retire at 65 upon a certain percentage of their wages, and to support their families and themselves in reasonable comfort.

But to my mind, the crowning act of his administration, in his relations with his men, was the establishment, at his suggestion and upon his initiative, of the system of reading rooms and club houses, not for the protection of life and limb, but for the mental, moral and social betterment of the men and of their wives and children as well.

At these reading rooms and club houses, which now represent a large investment, are provided by the railway system newspapers, periodicals and good books, baths and beds at a nominal price, and at Needles, on the desert, where the thermometer is always high, a capacious plunge, rational amusements and, from time to time, lectures and concerts. Here, not only the men, but their wives and children, have a place to go and read and get diversion, and become acquainted with each other. As a result, the saloon has been largely eliminated from the life of the men, their standards of living have been raised, and their inter-

course with their fellow-employees rendered more friendly.

But above and beyond all, this substantial manifestation of interest in their welfare has made the Santa Fe men one great family, with Mr. Ripley as the acknowledged head, and with the common object of good service to be striven for by all. As a result, a genuine sentimental attachment for the road has been developed with a loyalty and devotion to the company's interests unsurpassed, and the corporation, no longer soulless, has become instinct with a vitality whose spark was originally struck by our president, and whose development has been zealously fostered by him.

If let alone, the Santa Fe employees are reluctant to strike. When trouble threatened once, some time ago, the superintendent of the reading rooms overheard some men talking. One said, "As long as that man Ripley's heart is at the head of the Santa Fe, there will be no trouble." This tells, in awkward phrase, perhaps, the real secret of Mr. Ripley's success as the chief executive of a great railway system. He has a head capable of conceiving big things, with rare administrative power and an indomitable will to carry them into execution. But beneath the rugged exterior of this manly man beats a big heart, full of the milk of human kindness—safeguarding the lives and limbs of his employees, caring for them when sick and injured, ministering to the higher and better life of themselves and their families, and providing for their reasonable support when old age compels retirement. What wonder that the men admire, revere and love their chief!

#### MR. RIPLEY'S ADDRESS

As the 70 candles on the birthday cake burned low, Mr. Ripley addressed the gathering as follows:

Such things as have been said of and to me tonight are usually reserved for men's tombstones—perhaps on the theory that a disembodied spirit may read them without emotion; but being still in the flesh and human, they are to me pleasantly overpowering, even if not entirely deserved. Our friend Sancho Panza remarked wisely that, "We are all as God made us, and some of us a great deal worse"—and perhaps the most that any of us can claim is that he has not dissipated the natural gifts with which he started in life and has made good use of his natural talents, or, in Sancho Panza's language, has not made himself "worse."

And before proceeding I desire here to pay tribute of praise to her who joined her life to mine 44 years ago and has since provided the comforts and the rest of a quiet home, who has twice accompanied me through the valley of the shadow of death, who has watched over me mentally, morally and physically, and who is mainly responsible for such success as has been mine in conserving mind and body. I ask you, friends, to join me in drinking the health of my wife.

And, secondly, such success as has been mine has been due to those who have worked with me and than whom no more able and efficient men are in existence. No one man is of any possible consequence; no one man can accomplish anything in a large way without loyal and enthusiastic support. This support I have now and I have always had in unstinted measure—the "esprit de corps" of the Santa Fe has become known and is commented on by everybody everywhere, and I desire here publicly to declare my appreciation of it and to thank not only those present but the great body of employees.

Thanks should be extended to our directors for the cordial support that has always been ours and the liberal backing they have supplied for all schemes looking toward the welfare of employees. Of the original 15 directors but six are still living, but I desire to state that in not any of the 25 or 30 who have at various times served on the board has there ever been any sign of self-seeking or effort to secure personal advantage. Each man has been "Santa Fe all the way"—and his vote cast in what he considered the best interests of the company without reference to his own.

We make no idle boast when we talk of our solidarity and our "team work." We may confidently claim that there is as little friction in our machinery as in any institution of its magnitude



Dinner Given by Officers and Directors of the Santa Fe in Honor of President E. P. Ripley on his Seventieth Birthday, October 30, 1915



in the world. This condition begins with the directors—all busy men, with large outside interests, but all devoting their time and energies to the Santa Fe alone when in the board room; and it extends through all ranks and is ever noticeably present.

Nor is this loyalty and enthusiasm the result of laxness in discipline or lack of efficient supervision. Not only do the employees regard the company with a loyalty bordering on affection, but they perform their duties cheerfully and well. Not a day passes that travelers and others do not go out of their way to comment on the workmanlike and thorough manner in which things are done. I think the affection that men cherish for the railroad on which they were "raised" is very like that which one feels for his birthplace—the old home in which he played as a boy—it is a part of his earliest and happiest recollections, and no matter how far afield he may stray, or how high be his rise, he looks fondly back to the days of small things and to his old associations. But while we congratulate ourselves on what we have done, let us take heed lest we become conceited. We read that eternal vigilance is the price of liberty. Let us also remember that the higher one climbs the farther and harder will be his fall if he falls, and that we have established a reputation which requires continued effort for its maintenance.

Primarily, the corporation is organized for the benefit of the stockholders, but in safeguarding their interests those of the public must also be cared for. And in the interest of both stockholders and public it is important that the moral and physical welfare of the employee be also looked after. This three-fold duty—to the public, the employees and the owners—is sometimes perplexing, but I think we can claim with confidence that cases of doubt have generally resulted in a solution beneficial both to public and employee, and the stockholder represented by your directors and officers has been willing to subordinate his interest to the other two.

We have aimed at something more than a mere money-getting institution. We have sought to spread education and even culture where little of either previously existed. The Santa Fe has been an educational institution in many ways. It contributes the services of its engineers to counties and municipalities desiring expert advice. It graduates from its apprentice schools yearly something like 155 first-class mechanics; it maintains agricultural experts for the benefit of the farmer; it has set an example in architecture and has made life more attractive all over the southwest. Organized for profit and as a business venture, it has, I believe, fully lived up to its duties to the public as well as to its owners.

This is not the work of one man—it is that of everybody—and I account for it on the supposition that we all realize that the company is fair and just, that it has the welfare of its employees constantly in mind, and that it aims to reward merit. Long may the Santa Fe continue to keep the high position among the railroads of this country that it now occupies.

Nearly 20 years ago we began together what then appeared a somewhat doubtful struggle. We had 6,486 miles of road and not a mile of what to-day we would call good track. We had very little ballast, insufficient terminals, inferior power and mechanical appliances and our credit was not of the best. We earned in the first full fiscal year \$30,000,000. In the last fiscal year we operated nearly 12,000 miles, most of which could be classified as first-class track—about 1,000 miles of second track—and our power, equipment and terminals are second to none in the country; and last year we earned \$117,000,000 gross. In short, our mileage has increased 72 per cent, our capitalization 61 per cent and our earnings 284 per cent in the 20-year period.

Those of us who have been doing this work know that it has been accomplished in the face of many obstacles, and that it has not always been easy, but we also know that it has been an absorbingly interesting work, and that its success has been due to able support from above as well as from below.

Let us not on this occasion forget to acknowledge our debt to those who traveled with us over a portion of this long road, but who for various reasons left us—some of these like Walker, Higginson, Morton, Dun, Nicholson and Hurley, were taken from us to our great sorrow by death; others, like Kenna, Ken-

drick, Mudge, Biddle, Nixon, Gorman, Morawetz, Morse, left us for business reasons, or to fill high positions with other roads, and we are still fond of pointing to them as "Santa Fe exhibits;" their successors were once their pupils. We hope these, our graduates, will not lose their affection for Alma Mater.

Where all parts have been so well played it would be invidious to single out individual names, but I feel that I should call to your attention at this time the remarkable service performed by Victor Morawetz. His was the brain that conceived the plan of reorganization and his the mind that directed the policies of the company for many years. To him, more than to any one, is due the freedom from entangling alliances and the financial independence it is our fortune to enjoy. His high standards and his ability have helped more than any other cause to put the company in its present enviable position. He has a worthy successor in Mr. Hines, but his advent was after the main struggle and when the battle was more nearly won.

For myself, what can I say in appreciation of this occasion and of the feeling from which it grew. When the heart is fullest the speech is most halting. Association with you has been the greatest pleasure of my life. I cannot trust myself to say all that is in my heart. You have all been too good to me. This is the sunset glow. The shadows will soon begin to lengthen and the road grow more dim. But if I have lived to win the approbation of my contemporaries and to be of benefit to those with whom I have been associated, I can look with complacency on the signs of the closing day and go to my rest content.

#### CONGRATULATIONS BY THE BOARD OF DIRECTORS

Mr. Ripley's tribute to his wife caused the most affecting scene of the entire evening. Mrs. Ripley sat in the balcony and when Mr. Ripley proposed the toast, those present rose and with tears in the eyes of many, responded with cheer after cheer. Mr. Ripley received hundreds of telegrams of congratulations during the day, including many from men in the ranks. Each guest had written a personal tribute and these were all bound together and presented at the dinner. The Santa Fe board of directors met at Chicago during the day and adopted the following resolution:

"Resolved, That the board, on the occasion of its meeting in Chicago on the seventieth birthday of Mr. Ripley, tenders him its hearty congratulations, expresses its continually increasing appreciation of the great value of his services to the company and to the country, and declares its earnest wish for the continuance of his vigorous health and strength through many additional years."

The list of guests at the head table is as follows:

Theodore N. Vail, president, American Telephone & Telegraph Company; A. C. Bartlett, Hibbard, Spencer, Bartlett & Co.; William A. Fuller, J. J. Mitchell, president, Illinois Trust & Savings Bank; J. C. Stubbs, former traffic director, Harri-man Lines; Rev. Bernard Kelly, of Topeka, Kan.; J. M. Dickinson, receiver, Chicago, Rock Island & Pacific; Frank Trumbull, chairman, Missouri, Kansas & Texas and Chesapeake & Ohio; L. E. Johnson, president, Norfolk & Western; A. J. Earling, president, Chicago, Milwaukee & St. Paul; George B. Harris, chairman, Chicago, Burlington & Quincy; Marvin Hughitt, chairman, Chicago & North Western; Walker D. Hines, general counsel, Atchison, Topeka & Santa Fe; Edward P. Ripley, president, Atchison, Topeka & Santa Fe; Victor Morawetz, formerly general counsel and chairman executive committee, Atchison, Topeka & Santa Fe; Edward E. Ayer, Ayer & Lord Tie Company; Milton H. Smith, president, Louisville & Nashville; George M. Reynolds, president, Continental & Commercial National Bank; Gardiner Lathrop, general solicitor, Atchison, Topeka & Santa Fe; John S. Runnels, president, Pullman Company; C. S. Gleed, chairman, Missouri & Kansas Telephone Company; David B. Jones, chairman, National Zinc Company; John F. Harris, Harris, Winthrop & Co.; Frederic A. Delano, Federal Reserve Board; J. J. Glessner, vice-president, International Harvester Company.

# American Association of Passenger Traffic Officers

## Committee Reports Included Those on Telegraph Cipher Code, Printing Folders and Charges for Checking Baggage

A special meeting of the American Association of Passenger Traffic Officers was held at the French Lick Springs hotel, French Lick, Ind., on October 26. President Alexander Hilton, passenger traffic manager of the St. Louis & San Francisco, presided, and there were about 100 members of the association in attendance. President Hilton in his opening remarks called attention to the fact that while the association is not a legislative body, and thus cannot put its recommendations into effect, it has an important function in originating and discussing subjects to be referred to the various territorial associations.

L. W. Landman, general passenger agent of the Michigan Central, presented a report from the executive committee on a universal telegraph cipher code for handling interline passenger traffic business, for the purpose of not only reducing the expenses of telegraphing for sleeping car reservations and similar matters, but also saving time in ciphering and deciphering and greatly improving the efficiency of the service. Mr. Landman gave an outline of a complete cipher code, invented by J. Edwin Dempsey, of Chicago, a code expert, formerly connected with the traffic department of the Chicago & North Western, who has compiled cipher codes for several large railroads, and is now at work on one for the Chicago, Milwaukee & St. Paul, and who has been engaged by the executive committee to devise a code for universal use. The method employed in ciphering is unique, being in many ways a departure from the styles in general use. The plan includes the code book, which need be placed only in the hands of such officers as desired, the agents requiring only single sheets containing parts of the code used in their regular routine, and by its use the number of words in a telegram ordering reservations, etc., may be very greatly reduced, as single words are used to cover a vast amount of information. The plan was declared to be very simple and easy of manipulation. Illustrations were presented of the translation of ordinary messages into the code, showing in some cases a reduction from 42 words into 3 or 4. The executive committee was very strongly in favor of the plan, believing that it presented possibilities for very large savings in expenses, and proposed to submit copies of the code to the passenger traffic officer of each railroad with a request for a statement as to whether they could adopt the plan. It was explained that the plan would only reach its maximum of efficiency if adopted by all lines. The salient point of the Dempsey cipher code is that it successfully harnesses all detail in such manner as to make necessary the use of only one or two code words in any given message and at the same time it makes such a phenomenal reduction in words, that the saving in tolls on messages sent over commercial wires is very great, while the railroad wires are relieved of a great amount of their burden. The committee was authorized to incur the expense necessary to submit a complete report, with samples of the code, and an estimate of the expense to each railroad.

C. A. Cairns, general passenger agent of the Chicago & North Western, presented a report as chairman of the standing committee on association ticket paper, stating that a patent had been granted on the association's form of multi-route ticket and outlining a plan for a blanket bond to be issued by a surety company for all printers licensed to use association paper. The report was adopted and the secretary authorized to put the plan into effect, with a resolution urging all lines not already doing so to make use of the association paper and standard colors for tickets.

The Committee on Official Digest of Fares and Divisions, O. P. McCarty, passenger traffic manager, Baltimore & Ohio, chairman, presented a report from Agent E. L. Bevington that the digest of fares, a comprehensive collection of the tariffs, arbitraries and passenger divisions of all lines, which has been found to be

of very great assistance to the general officers in passenger accounting matters, is now practically up to date and complete, except as to the fares in western territory, where the tariffs are under suspension by the Interstate Commerce Commission.

The Committee on Adjustment of Disputes Relative to Divisions of Passenger Fares, O. P. McCarty, chairman, reported that peace and harmony apparently prevails, as no disputes had been submitted to the committee since the last meeting.

A report was received from the territorial committees advising of the progress made on subjects referred to the territorial associations at the San Francisco meeting.

The Committee on the Printing of Folders and Other Advertising Matter and Economical Distribution Thereof, H. J. Phelps, general passenger agent, Illinois Central, chairman, reported that its recommendations for the curtailment of distribution of folders in hotels and other public places had been adopted by the Western, Transcontinental and Central passenger associations, but are not yet effective, except in the Central Passenger Association territory, pending the concurrence of other associations. On request the secretary read a report of the action in this respect of the Central Passenger Association, in which the folder committee had reduced the distribution from 1,141 places to about 600, by eliminating most cities of less than 10,000 population, and by a close supervision of the distribution. The Central Passenger Association committee reported that it had gone about as far as it could without the co-operation of other associations. After a discussion the present committee was discharged, as it had requested, and it was decided to appoint a new committee, composed of the chairmen of the territorial associations, to continue the work. In the discussion it was brought out that while the distribution of folders and other advertising matter has been reduced to a considerable extent, the money saved is the result of a closer supervision of the distribution and does not represent the withdrawal of any service to the public.

The Committee on an Additional Charge for the Checking of Baggage, A. B. Smith, general passenger agent, New York, New Haven & Hartford, chairman, presented a recommendation, which was adopted, that the territorial associations give consideration to a plan for establishing a 10-cent terminal charge for the checking of each piece of baggage possibly to be proposed in lieu of requiring a declaration of value on account of the unlimited liability imposed by the Cummins amendment. Several members expressed the opinion that such a plan would be accepted without opposition, if the reasons for such a charge were properly presented, and it was stated that several commercial associations had already indicated their willingness to accept such a plan.

The Committee on Revision of Joint Tariffs, J. P. Anderson, general passenger agent, Pennsylvania Railroad, chairman, was continued and allowed further time for presenting its report, with instructions to endeavor to work out a plan for the simplification of tariffs with a view to economy and to co-operate with the Interstate Commerce Commission.

No report was presented by the Committee on the Expense of Special Train Service for Organized Party Business, but it was decided that the committee should be convened at an early date at the call of the president.

The Committee on Economies in the Operation of City Ticket Offices, S. G. Warner, general passenger agent, Kansas City Southern, chairman, presented a report expressing the opinion that unnecessary expense is incurred in maintaining city ticket offices at excessive rentals caused by competition among the roads for locations, and that offices can be secured which will give equally satisfactory service to the public in sections where



the rents are lower. It was the opinion of the committee that generally the expense of maintaining city ticket offices in cities of less than 50,000 population is not justified; that foreign lines should secure locations on upper floors and that wherever possible it would be advisable for two or more lines to occupy joint offices. The report elicited a general discussion of the plans for consolidated ticket offices which have been adopted in St. Louis, Memphis and Dallas at a very large saving in rentals, but while there seemed to be a general agreement on the advantages of the plan where it has been tried, the opinion was expressed that local conditions in many cities would defeat such a plan, especially where the present leases expire at different times. The report was accepted as information, and the committee was continued to co-operate with local committees that may be appointed to investigate the subject.

The report of the standing joint committee of the American Association of Passenger Traffic Officers and the Association of American Railway Accounting Officers, W. A. Lalor, general passenger agent, Chicago, Burlington & Quincy, chairman, presented a report urging upon all carriers the adoption of a uniform interline ticket at the earliest consistent date which will provide a uniform place on all tickets for the punching of one-half fare, second-class and baggage checked, thereby facilitating the work of selling agents, conductors and the accounting department. This recommendation was adopted and referred to the standing ticket committee. A recommendation was also adopted that the placing of prepaid ticket orders by telegraph or telephone be discontinued on January 1. The question of prepaid ticket orders was generally discussed. Many members were not in favor of discontinuing the placing of prepaid orders by telegraph, but desired to impose a scale of charges to cover the cost of the service. It was stated that the New England lines for several years have made it a practice to require the purchaser to pay the cost of telegraphing, while the Texas lines have confined their practice to the sale of such orders across the counter, leaving it to the purchaser to forward the order. It was pointed out that the practice of telegraphing involved considerable additional service and frequently a large expense for telegraphing, and some members were of the opinion that it was no part of the business of a railroad to deliver cash with such orders, while others were of the opinion that the placing of such orders was a service which the carriers should render for a charge covering the cost.

There was a general discussion of the relations of passenger traffic officers with the Interstate Commerce Commission, state commissions and commercial bodies. The subject was introduced by President Hilton, who in his remarks impressed upon the members the importance of continuing the work begun last year by the passenger men in addressing public meetings on the needs for higher passenger fares in the state. Mr. Hilton said this work should be continued throughout the country wherever possible. C. F. Daly, vice-president of the New York Central, said that this was the most important subject on the docket of the association; that the work done by the passenger men in educating the public along these lines was worth five times the advance in freight rates which the roads received, and that nothing the passenger department can do is so important as educating the public as to the facts about the railroad business, the ignorance of which is responsible for much of the hostility to the railroads. Others spoke in the same strain, urging the importance of continuing the work and pointing to the fact that while no state legislature had restored the passenger fare they had passed little anti-railroad legislation.

Four topics on the docket were deferred for discussion at the next meeting, as follows: "Improved Advertising Methods;" "The Automobile and Its Effect on Passenger Traffic;" "New Plans for the Docket" and "New Contract for Printing Association Ticket Paper."

The subject of the advisability of the curtailment or abandonment of entertainment at meetings of the association, the abolishment of addresses of welcome by state and city officials, and representatives of local bodies at meetings of the associa-

tion, as well as the discontinuance of reports from co-operating associations except in special cases involving subjects of peculiar interest, were referred to the executive committee with the idea of restricting the program of meetings more closely to the business of the association.

The association went on record as being opposed to the use of specimens or imitation passenger tickets for advertising or other similar purposes foreign to the legitimate use of regular tickets. An amendment to the constitution was adopted, providing that in the case of railways having two or more officers with the title of passenger traffic manager, assistant passenger traffic manager, general passenger agent and general ticket agent, all or either of these officers shall be eligible for membership, and each shall be entitled to a vote. This supersedes the plan of taking votes by lines.

There was a long discussion of plans for making the work of the association more effective by the appointment of a general conference committee to consider prior to the meetings important questions submitted by members, or by the territorial associations, and to endeavor to promote action on subjects of inter-territorial interest by the territorial associations in the effort to secure harmony of action at a uniform date. It was decided to request each territorial association to appoint three members of a general conference committee to meet at the call of the president, as a temporary plan pending action to provide a more permanent arrangement by amendment of the constitution at the next meeting.

Following the meeting of the association there was a short meeting of the fraternal society. Secretary-Treasurer W. C. Hope, general passenger agent of the Central of New Jersey, presented a statement exhibiting a very satisfactory condition of its affairs.

Charles F. Daly, vice-president of the New York Central, an honorary member of the association, visited the meeting during the afternoon and by invitation gave an informal talk on the increasing importance of the passenger department, in which he paid a high tribute to the work of passenger men. He said that railroads formerly were inclined to consider the passenger department as the "gold lace" department, and more or less of a necessary evil, but that it is now coming to be regarded more from a standpoint of a revenue producer, because the executive officers are relying on their passenger departments as the most important influence on public sentiment toward the railroads, and because the attitude of the shippers of freight toward a road is largely determined by the impression they receive as passengers. Mr. Daly was formerly passenger traffic manager of the New York Central Lines East, and prior to his election as vice-president in charge of all traffic in 1908, his entire work had been in the passenger department. He said that the experience gained in passenger work had been invaluable to him as an executive officer, and had given him a point of view regarding his work not possessed by most executive officers.

SCOTTISH RAILWAYS HANDICAPPED BY LACK OF MEN.—The Scottish railways have been seriously handicapped by the large number of servants who have joined the colors. The Highland has been very badly hit, and this has had an unfortunate result in the locomotive department owing to a scarcity of fitters to carry out the necessary repairs. Private firms which have in hand some new locomotives for the Highland, and which could carry out some of the requisite repairs, have also been suffering from a scarcity of men, coupled with the fact that they have been engaged on government work. As a result of this shortage of locomotive power, the company's Buckie branch has had to be closed, and other restrictions were threatened. In consequence of representations to the Railway Executive Committee, a sub-committee of locomotive superintendents met at Perth on September 7, which, while protesting that none of the companies had an abundance of men or power, recognized that the Highland Company's position was particularly bad, and recommended that a number of engines and fitters be lent to it.—*The Engineer, London.*

## CONCEALED DAMAGE\*

By W. H. STREETER

Secretary, United Yard Masters' Association, Duluth, Minn.

One of the first things to be considered in a study of "concealed damage" is the loading of the car. Many car load shipments get away from their point of origin improperly loaded, owing to the fact that too much attention has been given by some over zealous warehouse foreman to reducing the cost of handling and loading freight and not enough to its proper stowing in the car. The results are that a few cents have been shaved from the pay roll of the warehouse and many dollars lost, by the car being rushed out improperly loaded.

To eliminate claims of this nature, or at least to greatly reduce them, an inspector looking after carload shipments and seeing that they were properly crated and stowed would more than earn his salary, for the time and expense attached to tracing claims of this nature that could be saved would more than offset the added expense of maintaining such inspection. A few cents more a ton added to the cost of handling in the warehouse would also greatly tend to reduce losses of this kind, and careful crating of all extra fragile shipments would be another step in the right direction. I do not mean to imply that they are not crated at this time, but some of the material used is not what it should be and what is used is sometimes applied in a very indifferent manner. Better material and better workmanship at a slightly increased cost would give better results all around.

Next in line we have the handling of car load shipments while in the yard. No matter how carefully rough handling of cars is watched there is always the possibility of its occurrence. To eliminate this phase of concealed damage, would not it be a practical part of the scheme to have what might be called a "switching inspector," whose duties would consist of traveling through the different parts of the yard where the work is going on, and educate the crews handling the cars on speed and distance? This is an all important factor in the switching of cars, and is something that takes a thoroughly competent man to judge safely. If the crew handling the cars are experts in this line, there is not apt to be much damage to any of the cars or their contents, but if they are not, the cars and the freight suffer, and to the inexperienced eye there is nothing to denote that such is taking place. This is where a switching inspector would have an opportunity to more than earn his salary. He would in no way have direct control over the crews as far as issuing orders or mapping out their work for them, but his efficiency would consist of working in conjunction with the yard master, traveling around through the yard and educating the men on the finer points of the work, giving advice where needed, and overseeing and coaching the work in general, as pertaining to the handling of the cars.

Taking up the possibility of "concealed damage" occurring while the car is being handled in trains en route from one point to another, it is not absolutely necessary that a car get mixed up in a wreck while en route for its contents to become damaged. In these days of long trains and heavy power, the straining and shaking that a car gets under the most favorable conditions are liable to result in the damage of some part of its contents and especially so when attention and care have not been exercised fully in seeing that the contents were properly stowed and secured before the car was allowed to leave its initial starting point.

Who is responsible for the claims that are constantly arising for "Concealed Damage" on through car load shipments that have come from a great distance, and have been handled by several roads? No one is in a position to say where and how the damage was done and it is for this reason that all of the roads that have anything to do with the handling of an interline car-load shipment are called upon to participate in the majority of the final settlements that are made for "con-

cealed damage." Would it not therefore be a good plan to create an office, to be filled by a thoroughly experienced and competent man, who would have for his special duties the inspecting of the actual conditions of all car load shipments originating off the line, this inspection to be made before the car and its contents are accepted unconditionally? In this manner if there had been any rough handling of the car prior to his inspection, and its contents had been damaged, proper notice could be given to the road making the delivery, a record taken and the fact that the damage was discovered before the car was accepted would be sufficient proof to guarantee the non-liability of the road for which the car was destined. This plan could be worked out as a joint inspection if necessary to reduce any exceptionally high cost, but no matter how handled, either jointly or otherwise, it would go a long way towards reducing the total amounts paid out in the course of a year for claims that would otherwise have been saddled onto the road making the inspection. Inspection of this kind could also be worked out to good advantage in the handling of perishable shipments, particularly fruits and similar commodities that call for careful stowing and watchful attention while en route.

Inspection of this kind, if faithfully carried out, would also be a very forceful incentive for all participating in the handling of a shipment to see that it was delivered to the consignee in first class condition. The time-worn and much-abused stereotyped phrase of "No rough handling while in my charge" would be relegated to ancient history, for the parties at fault would before long become fully cognizant of the fact that the responsibility could and most certainly would be placed where it rightfully belonged, and with this fact continually before them, more care would be exercised in all departments, rough handling of cars both on the road and in the yards would be reduced to a minimum, and the natural results would be that the factor of "concealed damage" would be reduced to one of the minor quantities, and shipments that had heretofore been delivered in anything but an O. K. condition could be surrendered to their consignee in first class order, and, if not, the road making the delivery would be in a position to say who was responsible for the damage, and the ensuing claim could be adjusted in a reasonably short period of time to the mutual satisfaction of all concerned. The fact remains, that, with a rigid inspection in force, more shipments would be delivered free from damage of any description, and more satisfaction derived from this by all concerned, than could possibly be gained from the adjustment of any claim, no matter how quickly adjusted or how liberal the settlement.

**RUSSIAN REFRIGERATOR CARS.**—In no European country has more attention been paid to refrigerator car problems than in Russia, and the war has not lessened activity in this direction. The Moscow-Kazan Railway has just come out with an ambitious program which provides for the construction of no fewer than 87 eight-wheeled "isothermic wagons," besides a considerable number of ice stores, including freezing rooms and an ice factory at Moscow with a capacity for 5,000 tons of merchandise. The total cost of these schemes is estimated at \$1,845,000. A project is also in hand for new cold storage facilities at Orenburg and plans for special cold stores at Astrakhan and other Caspian ports. Quite recently the first trainload of frozen meat and fish arrived at Petrograd from Astrakhan. All the merchandise bore the journey admirably, arriving in excellent condition. The Russian railways have taken a leaf from the books of the American lines by the provision of an exhibition or demonstration car. This is in the form of a museum refrigerator wagon and has been provided by the Causasian Railway, a line on which a constant refrigerated service is maintained between Moscow and the Northern Caucasus. The object of this particular vehicle is to give a practical demonstration to agriculturists and others within the territory of the Caucasian Railway of the possibilities in the way of refrigerated wagons, and the car is to journey a considerable distance, making stops at important centres en route.—*Railway Gazette, London.*

\* Abstract of a paper presented before the convention of the United Yard Masters' Association, Seattle, Wash., July 15, 1915.



# Completing the Mount Royal Tunnel into Montreal

This Project of the Canadian Northern Involves  
a Number of Interesting Details of Construction

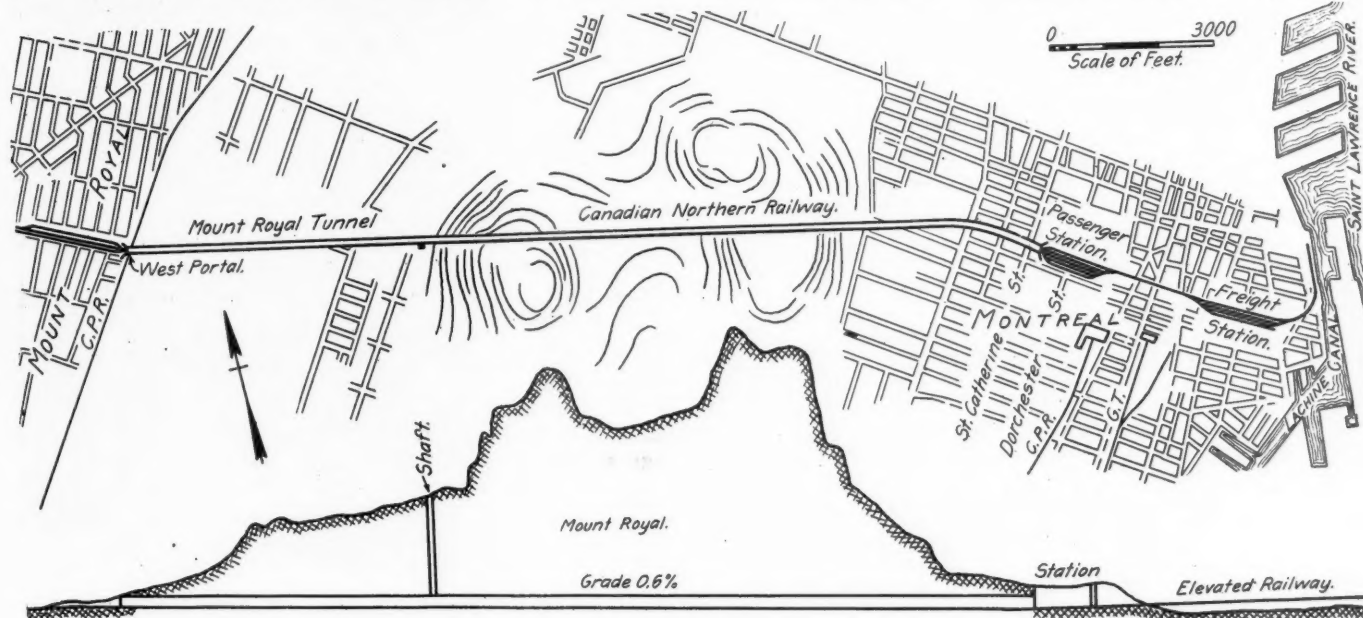
The Mount Royal tunnel, the most important link in the project of the Canadian Northern to secure an entrance into the business center of Montreal, is now nearing completion. The city occupies part of an island in the St. Lawrence river and is situated on a slope between the river and a long ridge 800 ft. high known as Mount Royal, a situation eliminating all approach by railroad except from the southwest and the northeast along the river, which routes are already fully occupied by the Canadian Pacific and the Grand Trunk. The Canadian Northern chose to reach the city by what is apparently the only remaining route, namely, a tunnel through the mountain from the northwest, a scheme which enabled it to select a terminal site of particularly strategic position in the heart of the city. A complete description of the tunnel and the proposed terminal and an account of the construction methods as far as they had been developed, was published in the *Railway Age Gazette* of October 10, 1913.

The Canadian Northern now has a terminal in the northeast portion of Montreal at some distance from the business center. This connects direct with its eastern lines, but the western con-

comotives will be used to haul transcontinental, express and local traffic which extends beyond the proposed electric zone, and multiple unit motor cars will be used for the traffic inside of that district. Eighty-ton locomotives will be used, capable of producing a speed of 50 miles an hour. The multiple unit cars will weigh 50 tons and will have a speed of 45 miles an hour and a seating capacity of 70 passengers. The power will be 2,400 volts direct current. The contact circuit will be of the overhead catenary type, the character of the climate making a third rail inadvisable outside of the tunnel. A substation for power conversion has been built near the west portal of the tunnel and an auxiliary steam plant is contemplated near the Black river as insurance against any interruption of service. A yard is also to be provided near Cartierville for the classification of freight and the transfer from steam to electric traction.

## PROGRESS

The tunnel is being built for double track and is 23.5 ft. high by 31 ft. wide. It is located almost entirely in rock, Trenton



Plan and Profile of the Mount Royal Tunnel

nection is very circuitous. The main line west, which is not yet in operation, runs along the north side of the Island of Montreal, behind Mount Royal and follows along the northeast end of that ridge. The tunnel branch leaves the main line a mile or more east of Cartierville and enters the tunnel just west of the Outremont yard of the Canadian Pacific. The tunnel is 3.1 miles long and the proposed passenger terminal will be located immediately adjacent to the east portal between Mansfield and St. Monique streets and Cathcart and Laguachetiere streets, this site being one block southeast from St. Catherine street, the main shopping thoroughfare, and one block northeast of Dominion Square. As the tracks at the station will be 50 ft. below the level of Dorchester street, most of the station proper will be underground, with facilities arranged at various levels. The ground drops off rapidly toward the river and the plans provide for a future elevated railway over the lower part of the city for purposes of an elevated freight terminal and connections with the harbor. West of the west portal provision has been made for the model city—Mount Royal—a suburban project, the development of which is expected to pay a large part of the cost of the tunnel undertaking.

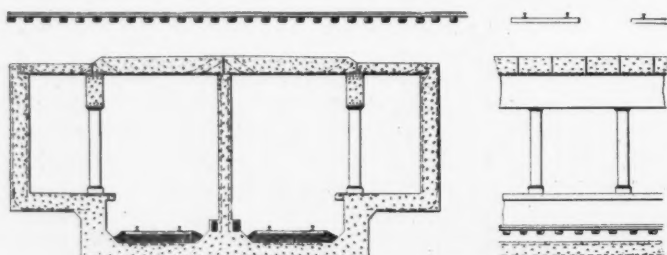
All trains through the tunnel will be operated electrically. Lo-

comotives will be used to haul transcontinental, express and local traffic which extends beyond the proposed electric zone, and multiple unit motor cars will be used for the traffic inside of that district. Eighty-ton locomotives will be used, capable of producing a speed of 50 miles an hour. The multiple unit cars will weigh 50 tons and will have a speed of 45 miles an hour and a seating capacity of 70 passengers. The power will be 2,400 volts direct current. The contact circuit will be of the overhead catenary type, the character of the climate making a third rail inadvisable outside of the tunnel. A substation for power conversion has been built near the west portal of the tunnel and an auxiliary steam plant is contemplated near the Black river as insurance against any interruption of service. A yard is also to be provided near Cartierville for the classification of freight and the transfer from steam to electric traction.

Practically all of the rock removed has been crushed for road material and concrete stone. All that is not used in tunnel masonry or on the railroad is sold for local consumption about Montreal. At the city end of the tunnel the rock is turned over to an outside company as it comes from the tunnel, but at the west

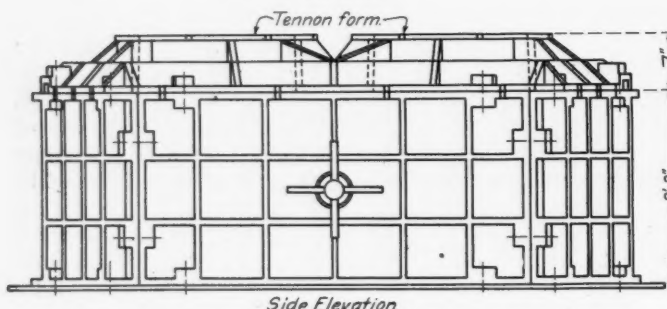
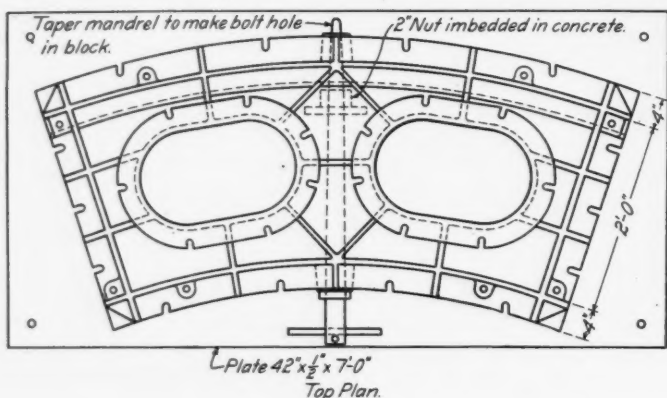
portal the tunnel company has built a large crushing plant with a capacity of 1,600 cu. yd. daily. At the same point a complete repair shop was also erected, which has been utilized as well for the construction of a large part of the tunneling and transportation equipment.

The meeting of the last two headings took place on December 10, 1913, and was followed rapidly by the completion of the overhead portion of the full section, except for the last half mile in the east end of the tunnel. The removal of the benches was



Sections through Station at Mount Royal Heights

delayed to the last to permit the use of a steam shovel to the best advantage, by carrying on the work progressively from the west end. The benches were shot down a sufficient distance in advance of the shovel to avoid possibility of interference. Bench drill carriages were used, which operated from 8 to 12 drills each. These carriages traveled down the heading, with arrangements at the sides overhanging the benches which carried the drills. The latter were the same as those used in the heading. A  $1\frac{1}{4}$ -cu. yd. Marion shovel was used, operating with compressed air. It was served by narrow gage tunnel cars having wooden boxes lined on the bottom and door ends with steel plates and handled by 6, 7 and 10-ton electric locomotives, taking power from an



Flanged Cast Iron Sectional Forms for Tunnel Lining Blocks

overhead trolley wire carrying 220 volts direct current. The shovel commenced work at the west portal in August, 1914, and stopped in May, 1915, about one-half mile from the east portal, where the character of the roof necessitated a change in the method of tunneling.

For a distance of about 1,100 ft. east from the end of the shovel work the rock in the roof is of such a character that it is not safe to take out the full section without following immediately with timbering or lining. In the first 200 ft. the section has been

taken out complete, except for the bench and the roof has been timbered; for the remaining 900 ft. a bottom heading 16 ft. high by 12 ft. wide has been driven without lining. It has been decided not to proceed with this part of the tunnel until it is convenient to follow the excavation of the upper part of the section with a permanent concrete arch as fast as the rock is taken out, the benches to be removed later. As the concreting of the lining is progressing continuously from the west portal, this portion of the tunnel will be completed when the lining has been brought up from the west, a distance of  $2\frac{1}{2}$  miles.

#### THE SHIELD SECTION

In the last 1,650 ft. of the tunnel on the city end a boulder clay appears at the top of the tunnel section, replacing the rock which dips down to the east so that at the east end of the tunnel the clay almost entirely replaces the rock. This soft top required a modification of the tunnel section and led to the adoption



Concrete Block Section and Shield, Center Wall on the Right

of the shield method of tunneling and the use of the self-supporting concrete tunnel lining blocks invented by John F. O'Rourke of New York. The tunnel section consists of two separate tubes each with a semi-circular top made of concrete arch voussoirs cast separately, set into position and supported on either side by concrete walls and in the middle by a dividing wall made up of  $10\frac{1}{4}$ -in., 65-lb. Bethlehem H-columns spaced 2 ft. 3 in. center to center and spanned by structural steel built-up lintels, all encased in concrete. The blocks are 2 ft. thick radially and 27 in. in the direction of the tunnel axis and were made in lengths of 5 ft. circumferentially. They have plain faces on the intrados and on the radial joints, but are provided on one vertical face with concrete keys or tenons 12 in. by 20 in. in section and 7 in. high, while the opposite face contains depressions of the same shape to engage the projections of the blocks in the adjacent ring of the arch.

A center bottom heading was used for this portion of the tunnel also, being made of sufficient width to permit the passage of muck cars on either side of the center wall columns subsequently erected. The roof was fully timbered and in places where the division between the clay and the rock comes below the top of the heading it was generally found necessary to timber the sides



as well. From this heading transverse drifts run at intervals up into the soft material on either side and from these drifts side headings were then driven longitudinally in the position of the two side walls, providing just sufficient width to permit the construction of forms and the concreting of the side walls from the level of the top of the sound rock to the springing line of the arches. The side drifts were generally at such an elevation relative to the center heading that the muck could be dropped directly into the cars. No rock was removed except for boulders encountered and such loose or unsatisfactory rock as was found overlying the solid rock stratum. The concrete for the branch walls was mixed by hand in the tunnel and passed into the drifts in buckets.

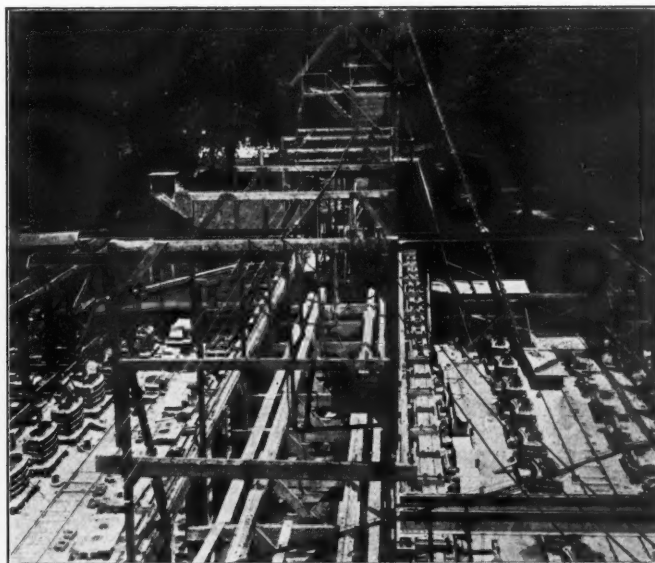
The shield is an application of common shield practice modified to suit the situation at hand, the parts of the two bores being joined at the center line and operated and advanced together. It was supported by and traveled on the previously built center and side walls. The shield consists of two semi-cylinders made



Shovel Removing the Bench Rock

of structural plates and stiffened by semi-circular structural steel diaphragms and girders which contain the operating galleries. The cylinders are of sufficient length to extend back over two or three of the rings of the arch last placed and project forward of them to form cutting edges or aprons under which the excavation was carried on. As the excavation was made the shield was advanced by means of 17 hydraulic jacks located on the circumference of the working galleries and bearing against the last completed rings of concrete blocks. An erector, a device for handling the concrete blocks, is pivoted under each working gallery and has four motions: rotation on the pivot by means of a pinion and ram-operated rack, radially by means of a ram within the erector arm, longitudinally in the direction of the axis of the pivot and rotation on the axis of the erector arm. By means of these four motions the concrete blocks were lifted from the cars, projected into the circle of the arch sufficiently in advance to clear the key lugs, rotated to line up with the key recesses of the ring last placed, brought into line vertically and then driven home, the keys entering the recesses. For the last operation the nearest shield jacks were brought into action to overcome frictional resistance between the blocks and were then left in bearing against the blocks to hold them in position with the assistance of the keys until all the blocks of a ring were in place, thus completing the arch. The head of the erector engaged the blocks by

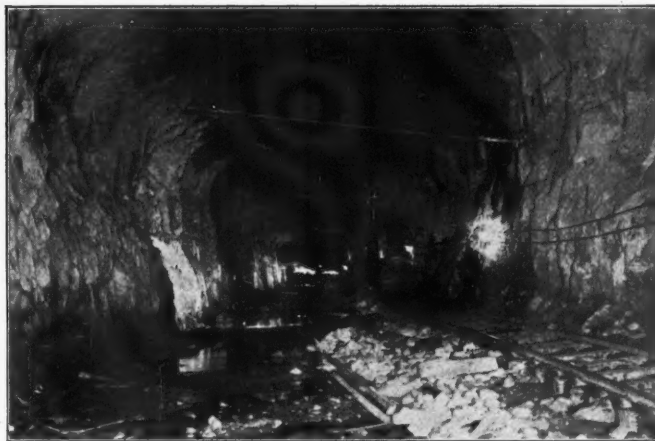
means of a 2-in. bolt which entered a hole in the center of the intrados and screwed into a 2-in. nut case in the center of the block. All operations of erectors and all of the advancing jacks were controlled by valves conveniently located in the operating gallery. The power was derived from water at a pressure of 3,000 to 6,000 lb. per sq. in. delivered in pipes from a duplex pump operated by compressed air and situated at some distance in the rear in a recess cut in the bench. The pump was moved forward from time



Yard for Concreting Tunnel Lining Blocks

to time as the shield advanced to avoid excessive lengths of the high pressure pipes.

The blocks were built to give slightly open ring joints when in place, which were closed up as the work proceeded by means of a cement gun, while a grouting machine was used at night to close up the 2-in. bolt holes in the center of the blocks and fill all voids outside the rings. The excavation in advance of the shield was carried on in a space just sufficiently wide to permit the men to work, thus affording them a maximum protection against falls. The shield was shoved forward whenever a space of about 27 in.



Tunnel Excavated to Full Section—Before Lining

was available. As the excavation was only carried to a sufficient depth to clear the erectors as they are advanced, it was possible to drop all the material removed directly into cars in the heading below. The H-columns of the center walls were erected one at a time as the excavation advanced, and as they fouled the top timbers of the heading it was necessary to remove the latter at the same time. The bench was removed at some distance in the rear of the shield. Pneumatic hand drills were used and the shots were small to preclude any chance of injury to the blocks or to the

iron work of the center wall. The muck was loaded on to cars by hand.

The progress at the shield depended upon the number of men employed and the number of shifts working. For a considerable part of the time the shield was operated in a single 10-hour shift. The only work done at night was to place the center wall steel work and the grouting. With this program three rings were usually set in each bore each day. With 24-hour operation the progress would be increased to at least six rings a day.

All of the work with the shield method was in a portion of the tunnel with the least thickness of cover (from 30 ft. to 60 ft.), and was directly under a highly improved portion of the city. Because of this and the fact that the material is of a soft character, some trouble was experienced in the start with surface settlement, requiring the shoring and bracing of a few buildings, but with increased experience it was possible to avoid surface troubles almost entirely. At the intersection of McGill College avenue and St. Catherine street there is an intricate network of pipes for various utilities, including some large size water mains. As settlement in such a situation would be likely to have serious consequences, special precautions were taken. The street intersection was excavated to a slight depth below the pipes, and sills and props were placed in position so that the pipes could be jacked up if found necessary from daily observations. Planking was provided to afford a minimum disturbance of the street traffic. Spoil from the tunnel work at the city end which contained too much foreign matter to be passed through the rock crusher was brought up at the Dorchester street shaft and dumped into a bank on vacant property at this point where it was taken over by a contractor for disposal.

Another shaft was provided at Cathcart street and was used to supply the iron work for the center walls, the concrete material for the side walls and the concrete tunnel blocks from a material yard located close by. This yard included a plant for the manufacture of the concrete blocks. As shown in the accompanying photograph, this consists of a trestle through the middle of the layout about 20 ft. high with a yard on either side. At the street end of the trestle is a tower with bins which are supplied with concrete materials by means of a chain bucket hoist from a hopper at the street level. The mixer, carrying a small material storage bin, is supported on a truck which was run out to any desired position on the trestle to spout the concrete to forms in the yards below on either side.

The concrete block forms were made up of flanged cast iron sections bolted together and set on a steel plate supported on skids. The forms were arranged to fill the key lugs last and were fitted with a screw press arrangement designed to finish off the top of the key lugs to exact level and to insure perfect filling of all corners. It was found in practice that this device is unnecessary. The tenons were filled as high as possible, left for about an hour and then struck off to the level of the top of the form. The yards were served by traveling cranes equipped with hand chain hoists, for handling the form sections and the blocks. The latter were set on small flat cars and delivered to the Cathcart street shaft.

#### OTHER DETAILS

The lining of the tunnel, except in the shield section, is being carried on progressively from the west portal, using the pneumatic mixing and placing system. In the main, one double track arch is used, notched into the rock of the side walls, except when the rock is bad or broken wide and thin walls are required to cover the irregularities of the rock. Only the arch is being concreted at present. The placing of a center wall will be postponed except at such points where it will be required to assist in supporting the top, or to serve as an encasement for the steel columns of the concrete block section. Trimming of the side walls is carried on in advance of the lining.

West of the west portal the line will be in an open cut through the city of Mount Royal. However, west from the portal for a distance of 700 ft. the line will really be under cover, the first 300 ft. being cut and cover subway work and the remaining 400 ft.

comprising the local station of Mount Royal Heights. Part of the latter is under the Canadian Pacific tracks to provide grade separation of the two lines. This portion of the station has been completed and the cross section shown in the accompanying drawing illustrates the character of the station layout. Reinforced concrete was used throughout under the tracks. On account of the increased loading, a row of columns was required next to the edge of each of the platforms, and to avoid interference with traffic on the Canadian Pacific it was necessary to build the cover of unit slabs which were set in place after they had been cured.

It is expected that the tunnel will be ready for use soon and it is intended to commence operation before the Montreal passenger terminal is completed, as the initial traffic can be taken care of with much less extensive accommodations than is contemplated for the complete terminal. The traffic for which the terminal is to be designed will, of course, not be realized until the suburban development is well under way. The entire tunnel project is under the direction of S. P. Brown, chief engineer of the Mount Royal Tunnel and Terminal Company, Limited, the constructing corporation.

#### STATE LEGISLATION RELATING TO OPERATION

The Special Committee on Relations of Railway Operation to Legislation has issued Bulletin No. 73, including a table similar to that which has been issued in previous years, showing the classification of bills introduced and laws enacted relating to railway operation in the state legislatures which were in session in 1915. The statement shows that while the number of bills of this character introduced continues to be large, the number of laws enacted is considerably less than in 1913, the last year when most of the legislatures were in session. In 1915, 43 legislatures were in session and the number of bills introduced was 1,097, while the number of laws enacted was only 137. A comparison with the four preceding years is shown in the following table:

	1915	1914	1913	1912	1911
Legislatures in session.....	43	*14	42	*19	37
Bills introduced.....	1,097	236	1,395	292	512
Laws enacted .....	137	27	230	48	**

\* Including special sessions.

\*\* This data not compiled in 1911.

Bills relating to railway operation were enacted in 37 states. None were passed in Colorado, Georgia, Idaho, Utah, Washington or Wyoming of the states whose legislatures were in session. In addition to the reduction in the number of bills enacted there was also a marked change in the character of the laws passed, most of them relating to comparatively minor details of operation. The most numerous class of laws passed is grouped under the head "Miscellaneous," of which there were 27, while 154 bills of this character were introduced. The next most numerous class relates to service letters, time and manner of payment, of which 73 bills were introduced and 15 laws passed.

The most numerous class of bills introduced were those relating to employees, of which 348 were introduced and 30 became laws. Fifty-two of these related to size of crews, of which only one was enacted, this being in California; 116 to hours of service, of which 5 were enacted, in Alabama, Arkansas, Michigan, Oklahoma and Texas; and 64 to terms and conditions of employment, of which 9 were passed. Eighteen bills were introduced relating to voluntary arbitration, of which 3 were passed, in Indiana, Massachusetts and Michigan. A total of 83 bills were introduced relating to equipment, of which 12 became laws, including 1 relating to cabooses in Ohio, 4 to headlights in Alabama, Missouri, Nevada and New Mexico; 1 to repair of equipment in Arkansas and 6 to appliances required, in Arkansas, California, Connecticut, Maine, New Hampshire and Ohio. Seventy-nine bills were introduced relating to passenger trains, of which 11 became laws. These include 5 relating to the equipment of passenger trains, in Florida, Illinois, Kansas, New Hampshire and Rhode Island, out of 38 bills introduced, and 2 bills relating to the makeup of passenger trains, in Connecticut



and Vermont, out of 4 introduced. There were 48 bills introduced relating to freight trains, of which only 2 were passed, 1 of these relating to the speed of dead freight and 1 to the handling of explosives.

A total of 23 bills relating to cars were introduced, of which 3 were passed; 17 bills related to the furnishing of cars, of which 2 were passed, in Minnesota and in North Dakota, and 6 relating to demurrage and storage, of which 1 was passed, in Vermont. There were 11 bills relating to block and other signals, of which 1 bill relating to block and interlock was enacted into law in Arkansas, and 1 relating to switch lights in Missouri. There were 9 bills relating to clearances, of which 2 were passed, in Kansas and in Minnesota, 78 bills relating to crossings, of which 12 were passed, 17 bills requiring crossings, of which 5 were passed, in California, Kansas, North Carolina, South Dakota and Wisconsin. Twenty-six bills relating to crossing protection were introduced, of which 2 were passed, in Indiana and in New York, 35 relating to the separation of grades, of which 5 were passed in Indiana, Michigan, New York, South Carolina and Vermont. There were 64 bills introduced relating to maintenance of way, of which 10 were passed; 75 bills relating to stations, of which 11 were passed; 13 relating to hospitals and relief departments, of which 3 were passed; and 10 relating to the payment of claims, of which none were passed. Forty-three bills were introduced relating to trespassers, of which 3 were passed, in North Dakota, Vermont and West Virginia, and 11 relating to the destruction of property by trespassers, of which 5 were passed. There were 5 bills introduced relating to the reporting of accidents, of which 1 was passed.

California heads the list as to number of laws passed in any state, with a total of 14 out of 51 bills introduced. In Texas 8 laws were passed out of 36 bills introduced, and in Kansas 7 laws out of 64 bills introduced. The largest number of bills introduced was in Kansas, with 64. In Minnesota 60 bills were introduced and only 4 passed, and in Missouri 56 were introduced and only 5 passed.

### LOSS AND DAMAGE COMMITTEES ON THE LEHIGH VALLEY

Since August 1, last, efforts leading to the reduction of loss and damage claims on the Lehigh Valley have been centered in the safety first committees, now known, instead, as the safety and loss and damage committees. These include a general loss and damage committee with the superintendent of transportation as its chairman, consisting of the assistant to the general manager, the assistant general solicitor, the freight claim agent, the traffic assistant, the chief of police and the general car inspector. There is also a bureau in the office of the superintendent of transportation maintained for the specific purpose of investigating and eliminating causes which lead to claim payments. To this bureau there is attached a corps of special agents assigned to specific territories covering the entire system who may be called upon to investigate an over, short or damage shipment even before a claim is filed.

When the idea was instituted it was necessary to increase

the size of the division and shop safety committees. The division committees, now known as the division safety and loss and damage committees, each consist of the superintendent who is also chairman, the assistant superintendent, the trainmaster, the chief train dispatcher, the master mechanic, a road foreman of engines, the division engineer, a supervisor of tracks, a supervisor of signals, a supervisor of bridges and buildings, the claims adjuster, the special agent and a police captain, yardmaster, foreman car inspector, roundhouse foreman, road engineer, yard engineer, foreman, conductor, yard clerk or checker, trainman, switchman, agent, section foreman and freight platform foreman. The supervisors, foremen and yardmasters each serve six months, and the men from the ranks are appointed by the division superintendent and also serve for the same length of time.

Reporting to the division committees are the shop safety and loss and damage committees at Sayre and Packerton, each consisting of one shop superintendent or general foreman of car repairs who acts as chairman, a general foreman, a sub-foreman or assistant, a foreman of car repairs, a foreman car inspector, a foreman of transfer of lading, a foreman of loaded car repairs, a general machine foreman, a shop adjuster, a piecework instructor and one man from each department. It will be seen that in choosing the committee members every effort is made to get the interest of the man on the job and to give him responsibility.

Each committeeman is expected to be constantly on the alert to prevent loss or damage; to keep the subject of preventing loss and damage constantly before his fellow employees, so as to impress them with its importance; to study the subject from the viewpoint of his own position, and to take proper action whenever the opportunity offers to prevent cause for claims. He is supposed to make suggestions to the chairman of the committee as to ways and means of effecting improvements in the handling of freight, and to take proper action upon suggestions leading to the prevention of loss and damage or regarding conditions to which attention is called by fellow employees.

All employees are asked to take particular care to help in eliminating the following more common causes for claims: Rough handling in starting and stopping trains, in switching at stations, on the road, and particularly in yards; improper stowing of freight in cars and warehouses; loading freight liable to be damaged by water into cars with leaky roofs and doors; rough handling of freight by employees in loading and unloading; failure to see that all package freight is properly marked, in accordance with marks shown on bill of lading and waybills; failure to trim down and brace freight before closing car doors; failure to clean cars before loading; failure to note exceptions in the case of freight damaged when received from shippers; signing bills of lading without positive knowledge that freight has been received, and failure to prevent pilfering of freight from cars or packages.

A great effort is being made to secure the co-operation of every employee who is in a position to help in any way. Every man is asked to be on the watch for things which may possibly be productive of damage claims, and to assure his communicating with the committee members special mailing cards are provided. These are addressed to the chairman of the division committee and may be obtained in the yardmasters' offices or from any committee member. An illustration of the card is given herewith. It is especially provided that cards containing information which may call attention to the action of fellow employees will not be used in the application of discipline, and that such matters are to be handled strictly through the usual channels only. All suggestions are handled by the division committees in so far as they have jurisdiction, and those that are accepted are announced in notices from the office of the superintendent. It is hoped not only to reduce the O. S. & D. claims considerably, but also to secure the good will of shippers and consignees by the prompt attention which is being paid to complaints of any kind.

_____ Date
The following practice or condition is liable to cause claims _____ _____ _____
Suggestion to prevent loss and damage _____ _____ _____
Signed _____

The Suggestion Card Which May Be Mailed to the Chairmen of the Lehigh Valley's Division Loss and Damage Committees

# Canadian Pacific Mountain Type Locomotives

The First Two Locomotives of This Type in Canada; the Leading Trucks are Equalized with the Driving Wheels

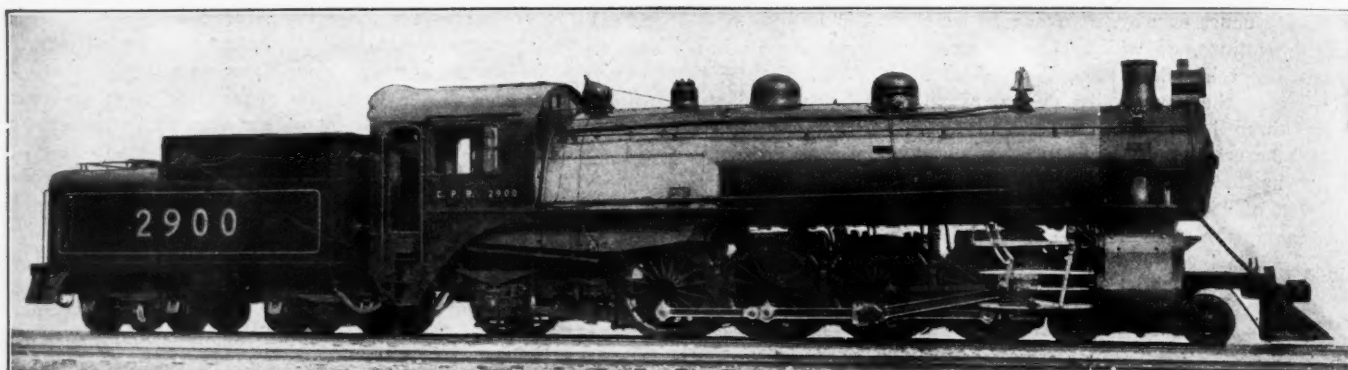
By W. H. WINTERROWD

Assistant Chief Mechanical Engineer, Canadian Pacific, Montreal, Que.

Because of the heavy grades on some divisions of the Canadian Pacific and on account of the desirability of maintaining schedule speeds with heavy trains without double-heading over these divisions, it became necessary to consider a type of locomotive more powerful than the Pacific type which is in use in the heavier passenger service. With this in view the company built and put in service in August, 1914, two Mountain type locomotives, which are the first of their type built in Canada. These locomotives were designed and built at the Angus shops, Montreal, and are identical in practically every respect with the exception of the boilers, one of which is equipped with a Gaines

By the American Locomotive Company's method of calculating boiler capacity, the boiler equipped with the Gaines combustion chamber is rated at approximately 110 per cent and the other boiler approximately 105 per cent. By the same method the boilers of the Pacific type locomotives are rated at approximately 90 per cent.

The firebox equipped with the Gaines combustion chamber is 7 ft. 4 $\frac{1}{2}$  in. wide and approximately 13 ft. 6 in. long at the mud ring. The grates extend toward the back tube sheet 7 ft. 11 in. and have an area of 59.6 sq. ft. At the front of the grates is placed the vertical brick wall of the combustion cham-



Canadian Pacific Mountain Type Locomotive with Gaines Combustion Chamber Firebox

ber which is 10 in. thick and carries five vertical air passages, each 3 in. in diameter. The distance between the wall and the back tube sheet is 4 ft. 11 $\frac{1}{2}$  in. The brick arch is carried on four 3 $\frac{1}{2}$  in. arch tubes.

Two classes of Pacific type locomotives have been in use, one with 22 $\frac{1}{2}$  in. by 28 in. cylinders and 75 in. driving wheels, and the other with 21 in. by 28 in. cylinders and 69 in. driving wheels. The boilers of both classes carry a pressure of 200 lb. The class with the larger drivers and cylinders has a rated tractive effort of 32,100 lb., the total weight in working order, including the tender, being 361,000 lb. On account of bridge and right of way restrictions, the Mountain type locomotives are not as heavy as a number of locomotives of the same type in service in the United States. They have a rated tractive effort of 42,900 lb. and weigh 443,000 lb., including the tender. With an increase in weight of 22.7 per cent, an increase in tractive effort of 33.6 per cent has been obtained. The accompanying table compares briefly the Canadian Pacific Mountain type locomotives and some of the same type operating in the United States:

The mud ring is forged and slopes downward from both front and back toward the base of the vertical bridge wall. On account of the depth of the firebox the floor of the combustion chamber is raised above the level of the grates in order to clear the rear driving wheels, which extend into the firebox.

The tubes in the boiler of engine 2901, which are 25 ft. 4 $\frac{1}{2}$  in. long, were beaded into place before the boiler was applied to the frames, with the boiler turned upside down. The center sag of the tubes was then toward the top of the boiler and when it was righted the tubes tended to straighten out. A test showed that they were practically straight and up to the present time they have given no more trouble than the shorter tubes in engine 2900.

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	Can. Pac. 2900*	Can. Pac. 2901	Rock Island	Ches. & Ohio	Great Northern	Missouri Pacific	Seaboard Air Line
Tractive effort, lb.....	42,900	42,900	50,000	58,000	61,900	50,400	47,800
Weight, total, lb.....	286,000	286,000	333,000	330,000	326,000	296,000	316,000
Weight on drivers.....	192,000	192,000	224,000	239,000	218,000	208,000	210,500
Diameter of drivers, in.....	70	70	69	62	62	63	69
Cylinders, diameter and stroke.....	23 $\frac{1}{2}$ x32	23 $\frac{1}{2}$ x32	28x28	29x28	28x32	28x28	27x28
Steam pressure, lb.....	200	200	185	180	180	170	190
Heating surface, tubes and flues.....	3,402	3,929	3,805	3,795	4,200	3,165	3,396
Firebox heating surface.....	265	221	312	337	340	285	319
Superheater heating surface.....	760	943	944	845	1,075	761	865
Total equivalent heating surface.....	4,807	5,564	5,533	5,399	6,153	4,592	5,012
Grate area.....	59.6	59.6	62.7	66.7	78.0	56.5	66.7
Factor of adhesion.....	4.48	4.48	4.48	4.12	3.68	4.14	4.38

\* Boiler equipped with Gaines combustion chamber.

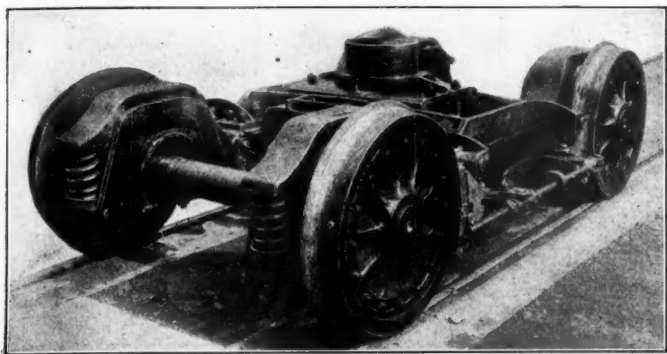
Engine 2900 is equipped with the Gaines combustion chamber firebox. The boiler contains 210 2 $\frac{1}{4}$  in. tubes and 30 5 $\frac{1}{4}$  in. flues. The length over tube sheets is 20 ft. 8 $\frac{1}{2}$  in. The boiler of engine 2901 is equipped with an ordinary wide firebox and brick. It contains 43 2 $\frac{1}{4}$  in. tubes, 136 2 $\frac{1}{2}$  in. tubes and 30 5 $\frac{1}{4}$  in. flues, the length over tube sheets being 25 ft. 4 $\frac{1}{2}$  in.

The equalizing system between the engine truck and driving wheels is that patented by H. A. Hoke, assistant engineer, Pennsylvania Railroad, and is in use on a number of Pennsylvania locomotives with four-wheel engine trucks. Its application to the Pennsylvania class E6s Atlantic type was described in the *Railway Age Gazette* for February 20, 1914, page 357. The



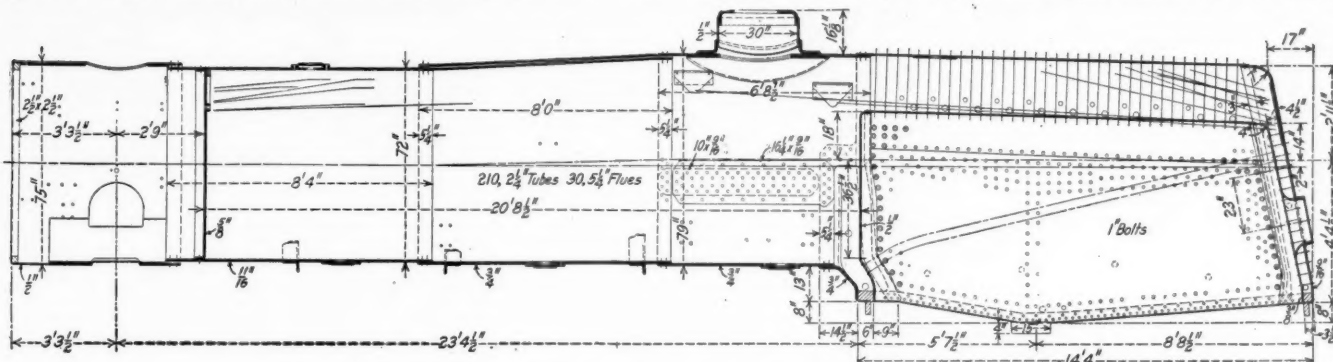
weight on the engine truck is equalized with the weight on the first and second pair of driving wheels, while the third and fourth pair of driving wheels are equalized with the trailer truck. The main equalizer fulcrum pin is supported in two steel castings fitted and bolted together directly beneath the cylinders. These castings serve also as a front frame cross tie, engine truck center casting guide and support for the engine truck safety hanger.

The engine truck center casting is made of cast steel. Its



### Leading Truck of Canadian Pacific Mountain Type Locomotives

upper portion, which fits into the vertical guide, is made in the form of a hollow cylinder in the back of which is an opening through which the front end of the main equalizer passes. The bearing surface on the end of the equalizer is convex with a radius of 3½ in., and rests upon a concave cast steel equalizer seat supported by the engine truck center casting. This seat is provided with guiding ribs which engage the sides of the equalizer to prevent the seat from turning under the latter. The



### Boiler of Engine 2900 with Gaines Firebox

lower part of the casting is rectangular in form and fits between transverse vertical walls on the cast steel frame cross tie, which form the guiding surfaces for the lateral swing of the truck in curving.

The truck is centered by double-faced wedges, the wearing faces of which are inclined 1 in. in  $2\frac{1}{2}$  in. The vertical guiding walls of the frame cross tie are joined at the ends to longitudinal vertical walls  $4\frac{1}{4}$  in. high, thus forming a rectangular reservoir, open at the top, which is kept partly filled with oil for the lubrication of the centering wedges.

Through a reinforced extension on the front of the cross tie casting is a slot 2½ in. wide and 16 in. long formed on a radius of 2 ft. 8 in. Through this slot is passed the engine truck safety hanger, a wrought iron eye bolt 1¾ in. in diameter with a tee head on the bottom end. This is hung from the equalizer fulcrum.

The engine truck side frames are of steel cast integral with the journal box pedestals. They are of channel section and in the center of each is cast a spring seat in which rests a semi-elliptic spring. This is connected at the ends to inverted U-shaped equalizers, which span the journal boxes. Between the outer ends of these equalizers and the frame are placed coil springs, as shown in one of the illustrations. The wheel base

of the truck is 6 ft. 10 in., and in working order it weighs 11,250 lb. Actual service has demonstrated that this truck makes a very easy riding engine.

The cylinders are of cast iron and are the same as those used on the Canadian Pacific standard Mikado and ten-wheel type hump switch engines. In designing them particular attention was given to the steam and exhaust passages, which are unusually direct and of liberal cross sectional area. They are fitted with standard 12-in. piston valves.

The main frames of both engines are of vanadium cast steel and are cast integral with the front frames. The rear frames and the pedestal binders are of mild steel. Vanadium steel was also used in the crank pins.

The engines are both equipped with a screw reverse gear, the hand wheel, screw bearings, locking latch and position indicator of which are the same as those of the standard gear used on Pacific and Mikado type locomotives. In order to maintain the standard direction of movement for the top of the hand wheel, which is from left to right toward forward motion and from right to left to reverse, the threads on the screw are made left hand. The motion of the screw block is transmitted to the reach rod through a reverse lever, the motion of the rod thus being in the opposite direction from that of the block. The reach rod, which is very long on both engines, is made in three sections of extra heavy wrought iron pipe. The intermediate section works in a cast iron guide.

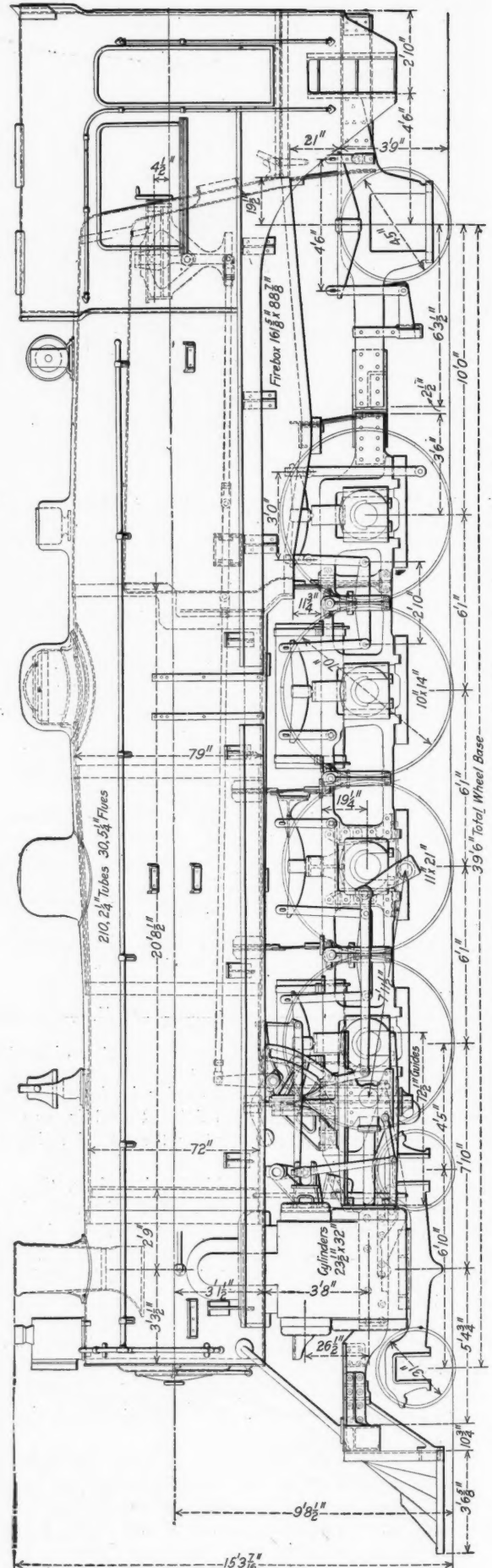
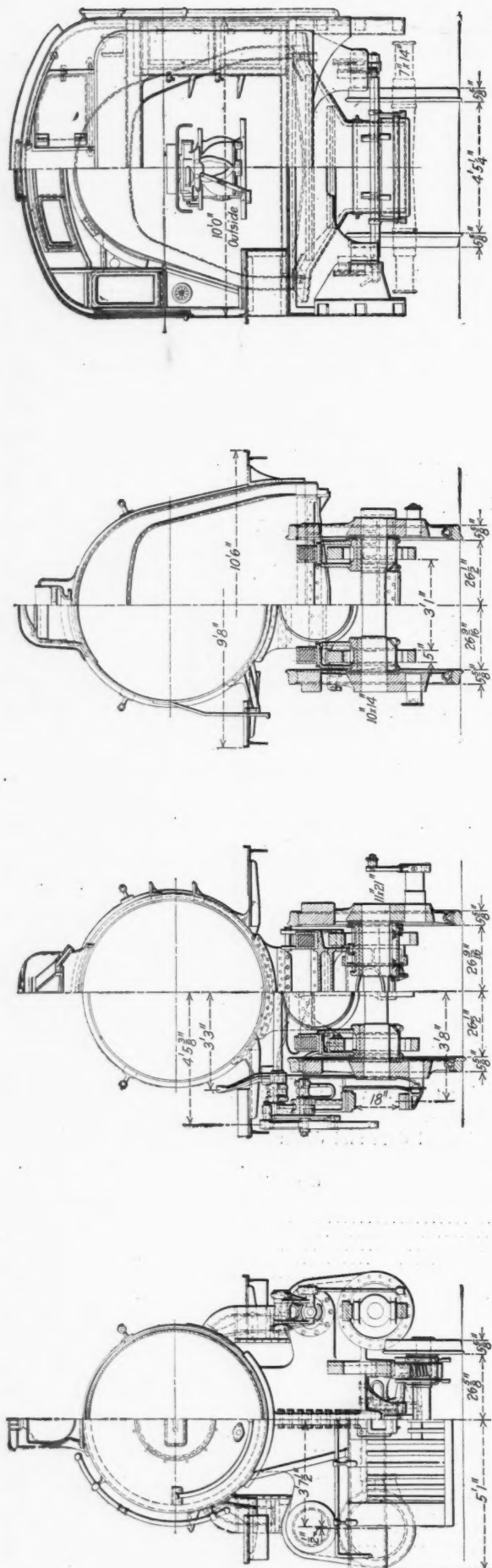
Both engines are equipped with Cole driving boxes on the main journals. These journals are 11 in. by 21 in., while the others are all 10 in. by 14 in. Canadian Pacific standard vestibule cabs are provided on both engines.

The tenders have a coal capacity of 12 tons, and a water capacity of 6,000 imperial gallons and are equipped with air-operated coal pushers. They are Canadian Pacific standard, known as the

combination type, in which the underframe forms a part of the tank structure.

The principal data and dimensions are given in the following table:

General Data	
2900—Class H-1-a	2901—Class H-1-b
Gage.....4 ft. 8½ in.	4 ft. 8½ in.
Service.....Passenger	Passenger
Fuel.....Bituminous	Bituminous
Tractive effort.....42,900 lb.	42,900 lb.
Weight in working order.....286,000 lb.	286,000 lb.
Weight on drivers.....192,000 lb.	192,000 lb.
Weight on leading truck.....53,000 lb.	52,000 lb.
Weight on trailing truck.....41,000 lb.	42,000 lb.
Weight of engine and tender in working order.....443,000 lb.	443,000 lb.
Wheel base, driving.....18 ft. 3 in.	18 ft. 3 in.
Wheel base, total.....39 ft. 6 in.	39 ft. 6 in.
Wheel base, engine and tender.....66 ft. 6 in.	66 ft. 6 in.
Ratios	
Weight on drivers ÷ tractive effort.....4.48	4.48
Total weight ÷ tractive effort.....6.665	6.665
Tractive effort × diam. drivers ÷ equivalent heating surface*.....625	539
Equivalent heating surface* ÷ grate area.....80.7	93.4
Firbox heating surface ÷ equivalent heating surface,* per cent.....5.5	3.92
Weight on drivers ÷ equivalent heating surface*.....39.9	34.5
Total weight ÷ equivalent heating surface*.....59.5	51.4
Volume both cylinders.....16.08 cu. ft.	16.08 cu. ft.
Equivalent heating surface* ÷ vol. cylinders.....299	346
Grate area ÷ vol. cylinders.....3.71	3.71



### Elevation and Cross Sections of Canadian Pacific Mountain Type Locomotive



Cylinders		2901-Class H-I-b	
2900-Class H-I-a		Simple	
Kind .....	Simple	23½ in. by 32 in.	
Diameter and stroke.....	23½ in. by 32 in.		
Valves		Piston valve	
Kind .....	Piston valve	12 in.	
Diameter .....	12 in.		
Wheels		70 in.	
Driving, diameter over tires.....	70 in.		
Driving journals, main, diameter and length .....	11 in. by 21 in.		
Driving journals, others, diameter and length .....	10 in. by 14 in.		
Engine truck wheels, diameter.....	31 in.		
Engine truck, journals.....	6 in. by 12 in.		
Trailing truck wheels, diameter.....	45 in.		
Trailing truck, journals.....	7 in. by 14 in.		
Boiler		Wagon top	
Style .....	Extended wagon top	72 in.	
Outside diameter of first ring.....	72 in.		
Working pressure.....	200 lb. per sq. in.		
Firebox, length and width.....	161½ in. by 88½ in.		
Firebox, water space.....	6 in., 4½ in., 3½ in.		
Tubes, number and outside diameter.....	210—2¼ in.		
Flues, number and outside diameter.....	30—5¼ in.		
Tubes and flues, length.....	20 ft. 7¾ in.		
Heating surface, tubes.....	2,552 sq. ft.		
Heating surface, flues.....	850 sq. ft.		
Heating surface, firebox.....	265 sq. ft.		
Heating surface, total.....	3,667 sq. ft.		
Superheater heating surface.....	760 sq. ft.		
Equivalent heating surface*.....	4,807 sq. ft.		
Grate area .....	59.6 sq. ft.		
Tender		Water bottom	
Tank.....	Water bottom	157,000 lb.	
Frame.....	Combined tank and frame	36¼ in.	
Weight .....	157,000 lb.		
Wheels, diameter .....	36¼ in.		
Journals, diameter and length.....	6 in. by 11 in.		
Water capacity.....	6,000 Imp. gals.		
Coal capacity .....	12 tons		

\* Equivalent heating surface = total evaporative heating surface + 1.5 times the superheating surface.

## STRIKE OF FREIGHT HANDLERS IN BOSTON

Reference was made in a news item in last week's issue to the strike of freight handlers in Boston, which, from the railroad standpoint, has been settled, although the mayor and other city officials have continued their efforts to settle it along other lines.

At 10:20 on the morning of October 21, a committee representing between 500 and 600 freight handlers employed by the road called on President Hustis, of the Boston & Maine, and informed him that unless these men were granted an increase of 15 per cent. in their wages and pay for holidays, whether they worked or not, they would strike at 12 o'clock, or 1 hour and 40 minutes after the notice was given. The men had had a conference the previous morning with General Manager Pollock, but gave no ultimatum or intention of their purpose to strike. President Hustis pointed out that the rates of pay on the Boston & Maine were the same as those on other roads entering Boston, and that if it were true, as stated, that the other Boston roads were considering a revision of rates, the Boston & Maine would, of course, not ignore any adjustment that might be made. He informed them of the financial condition of the road, that the stockholders had been, and are, getting no return on their investment, and that the men had presented no argument as to why any increase should be granted other than that the men demanded it. The committee was urged to delay action until its statements about the intentions of other roads could be investigated, and their attention was called to the great responsibility it was assuming in ordering a strike in this summary manner, because if the strike was unsuccessful the men would be left in a sorry position.

The committee called a strike of the men, and the management at once took action to fill their places, the employees secured being largely residents of Boston or surrounding towns, who were in need of employment. They were paid \$2.30 for 10 hours' work, the rate of the men who struck, and the standard for steam roads in the territory. These men were secured with the understanding that they would be given regular employment if they were found to be adapted to the work.

James M. Curley, mayor of Boston, called a conference on October 23, with a view to adjusting the dispute, at which the road was represented by Attorney Charles S. Pierce, and the

mayor submitted a proposition that the men return to work at the old rates, pending submission of the entire matter to the State Board of Conciliation and Arbitration for adjudication. The mayor made the same proposition in a letter to Mr. Hustis, who replied, setting forth the facts in the case, and stating that the strikers had failed to recognize the orderly procedure established for dealing with such matters, that the men who took their places had been secured with the understanding that they would be given regular employment and that to discharge them and take back those who summarily left the service would be a breach of faith. A large number of men had been put at work and the conditions at the Boston freight stations on that date, October 25, were generally satisfactory. The mayor then repeated his request that Mr. Hustis attend a conference to be attended by officers of the chamber of commerce, the port directors, representatives of the freight handlers and of the Boston & Albany and New York, New Haven & Hartford, whose men had also gone on strike. Neither of the other two roads sent representatives to the conference, but Mr. Pierce, the attorney for the Boston & Maine, stated that its position was that there was nothing to arbitrate, as the places of the men had been filled and the work was being done satisfactorily. Mr. Hustis declined to attend the conference, saying this would but complicate the situation.

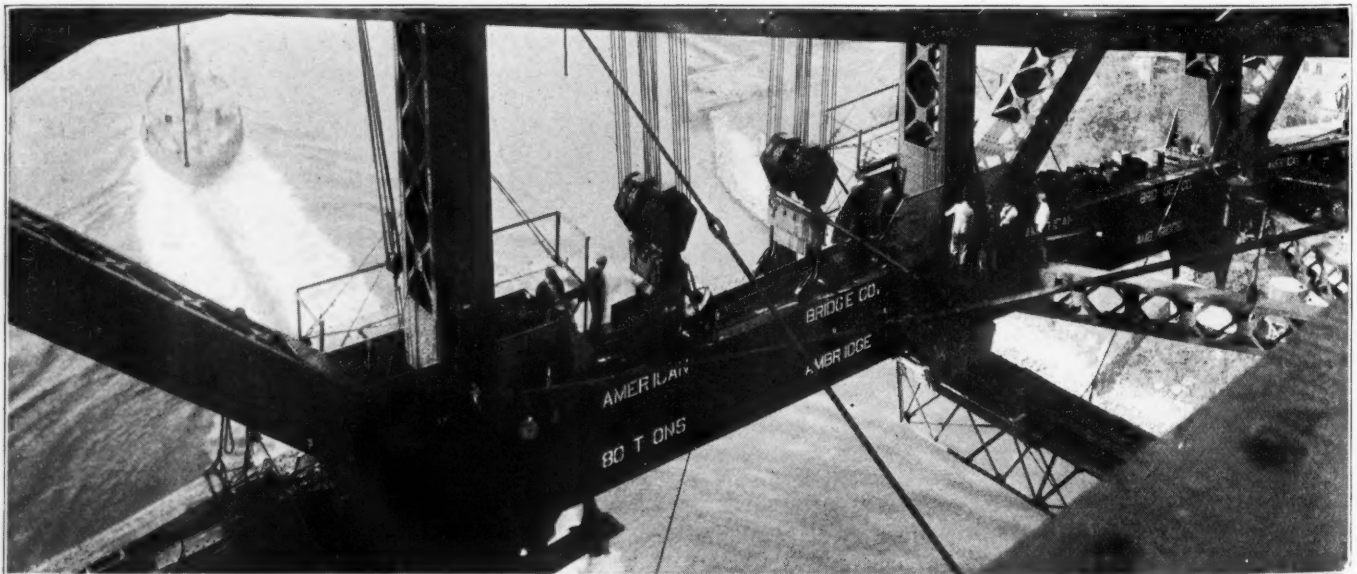
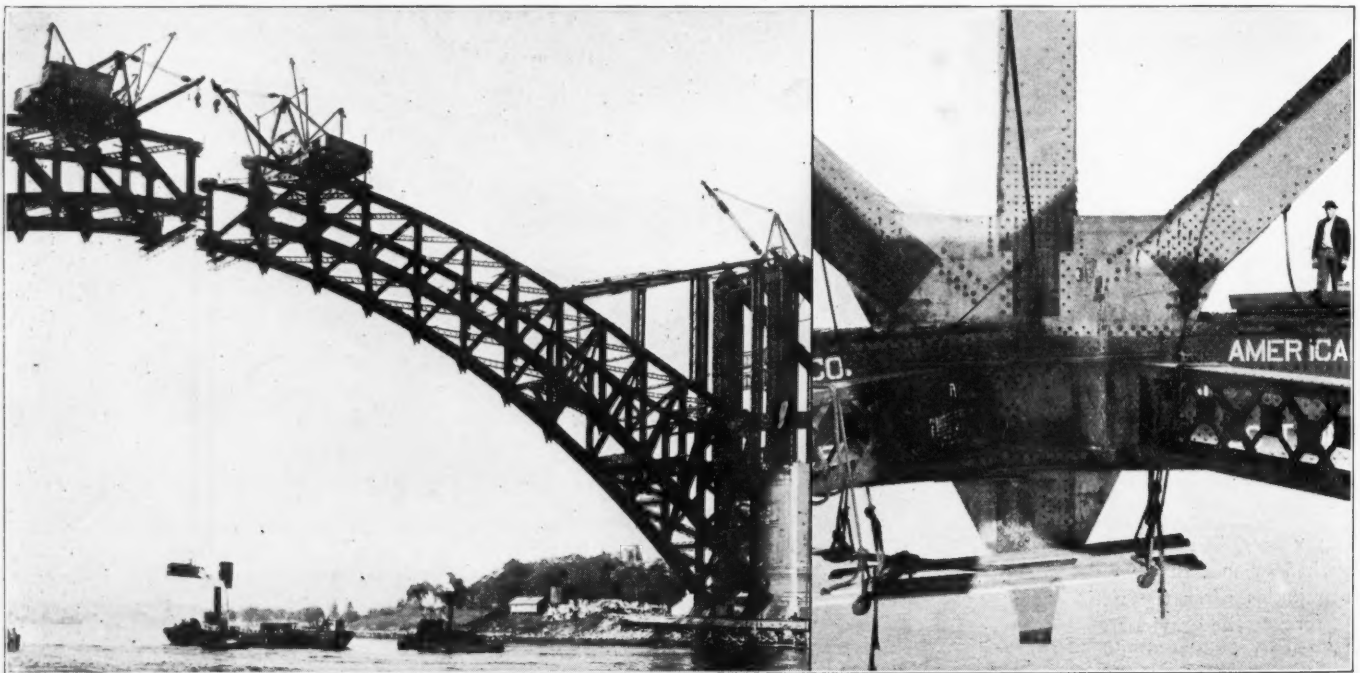
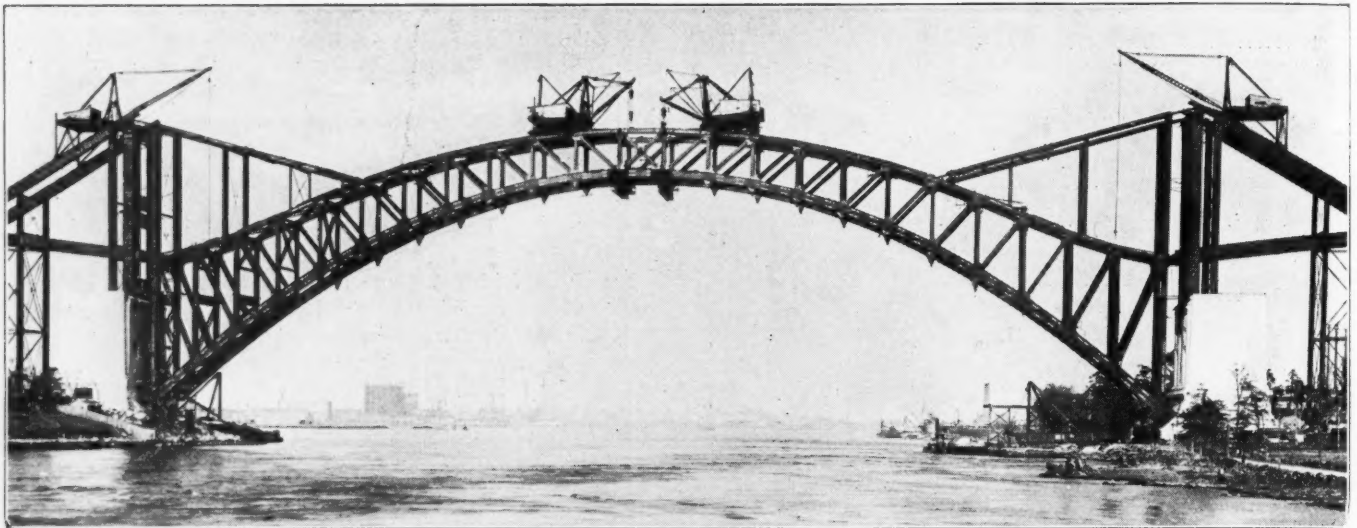
The mayor again repeated his request to Mr. Hustis for a conference, saying, "It is unwise, if not dangerous, to dispose of the question in such a summary manner," and that, in his opinion, "the sentiment of the community would strongly favor the payment of \$2.50 a day for 10 hours' work by able-bodied, intelligent men, skilled and experienced in their duty." Mr. Hustis declined to change his position, saying that the men were warned of the danger which might result from their proposed action and pointed out that the railroad had a public duty to perform, and when the freight handlers left their work the freight houses could not be closed and it could not cease the handling of shipments. It had, therefore, filled their places with other men with whom it could not break faith.

## PROGRESS ON THE HELL GATE BRIDGE

On September 29 the closing members were placed in the gap at the crown of the Hell Gate arch, thus marking an important step in the completion of the New York Connecting Railway. The erection of this structure as two separate cantilevers by means of temporary backstays, was described in the *Railway Age Gazette*, September 3, page 422. The projecting arms were supported by ties passing over the saddles at the top of the backstays, where 3,000-ton hydraulic jacks (the largest ever built) were provided to afford the necessary adjustment in the position of the ends of the two halves of the arch. The initial application of the load of the cantilevers to these saddles was made by raising the jacks a total of 15 in., which placed the ends of the cantilevers several inches above the normal closing position.

On September 28, all of the steel was in place except that for the panel at the crown. Measurements across the gap checked the theoretical distance (after correction for temperature and elevation) by 5/16 in., which was the total error in the span of 1,017 ft. On September 30 the center panel sections of the bottom chord were lifted into place by the travelers standing on the two cantilever arms. It having been decided to make the closure at the panel point west from the center line, these bottom chord sections were bolted and drifted for full connection to the east cantilever. Likewise, the diagonals from the east top chords and the lower half of the opposite diagonals were set in place. The top chords and the upper portions of one set of diagonals were omitted.

The two halves of the arch were brought together on Friday, October 1, by lowering the saddle jacks on the backstays. The amount of lowering necessary to bring the bottom chord to contact checked exactly on the Wards' Island side and to 1/32 in. on the Long Island side. The calculated depression necessary



(Top)—Placing Center Top Chord Sections on October 4. (Center Left)—Hoisting Bottom Chord Section from Car Float. (Center Right)—Inside Elevation of Completed Bottom Chord Joint at Crown of Arch. (Bottom)—Placing Closing Member of Bottom Chord



to release the load on the backstays checked equally well. This operation was carried on under careful observation to the jack pressures, results were reported at frequent intervals by telephone. With the placing of the center top chord sections on October 4, the erection of the main members of the arch was completed. These top chord members were fully bolted in place on their east ends only, just sufficient bolts in slotted holes being provided at the other ends to insure alinement. The purpose of this arrangement is to provide for three-hinged action of the arch until all of the steel of the arch span is in place. Action as a two-hinged arch will then be obtained by riveting up the top chord complete.

Work is now proceeding with the removal of the backstays, which it is expected to finish by December 1. With these out of the way, the two travelers will proceed with the erection of the suspenders and the floor beams, and the excavations will be made for the footings of the piers for the approach trestle. The girders of the approach trestles, which have been in use as a part of the backstays, will be distributed along the trestles by a locomotive crane operating over a track to be laid alongside. Derrick cars or cranes working on the tracks above can then readily pick up the girders for erection. A locomotive crane will be used also for erection of the floor stringers of the arch.

In all, about 400,000 rivets will be required for the arch structure. Of these only about 10 per cent have been driven up to the present time, and it is estimated that a year will be required to complete this portion of the work. Thus far, the riveting is limited principally to the top chord. No rivets have been driven in the bottom chord splices.

Work on this structure is under the direction of Gustav Lindenthal, chief engineer of the New York Connecting Railroad. O. H. Ammann is assistant chief engineer, and H. W. Hudson is construction engineer.

### ADJUSTABLE HUB PLATE

In the article describing the Smith adjustable hub plate, published on page 331 of the August 20 issue of the *Railway Age Gazette*, it was incorrectly stated that the adjustment of the hub plate was made by screwing in the grease plug shown in the outside of the wheel hub. The plug referred to is a retaining plug, and a special grease cup is used for this purpose. This cup, as shown in the illustration, is inserted in place of the retaining plug, and by screwing in the plunger the grease is forced into the hub, forcing the hub plate out the required distance, after which the grease cup is replaced by the retaining plug. Otherwise the description of the device as given in the issue of August 20 is correct. The right for its use is sold by the Smith Locomotive Adjustable Hub Plate Company, Pittsburgh, Kan.

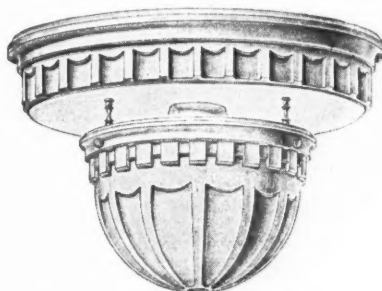


vice as given in the issue of August 20 is correct. The right for its use is sold by the Smith Locomotive Adjustable Hub Plate Company, Pittsburgh, Kan.

**THE FREIGHT CLERK AT THE TELEPHONE.**—Answer promptly. Your patrons are business men. Speak with lips close to transmitter. Nothing is more annoying than to have a voice sound faint and unintelligible. Don't be in too great a hurry. Let your patron know that you understand what is wanted and he will not fret while you are securing the desired information. Don't hang up receiver too quickly. Be sure your customer is satisfied before you ring off. Do patrons complain that your phone is often busy? Tell the boss. He will have additional phones installed if they are needed. Remember that people will call your competitor and get in habit of giving him all their business if they cannot get you quickly. When request is made for rate, quote it and tell inquirer about your service and ask him for the business. Secure his address and have solicitor call on him. People appreciate attention shown them. It gets business.—*F. B. Wilkinson, Illinois Central.*

### TWO NEW ILLUMINATION FIXTURES

Two interesting illumination fixtures have recently been developed, one for either large or small interiors, the other for exteriors. The interior fixture is known as the Brascolite and is of the semi-direct type. It comprises two definite features. There is a reflector of white enameled steel or vitreous china, which is secured in a horizontal position directly over the lamp and which



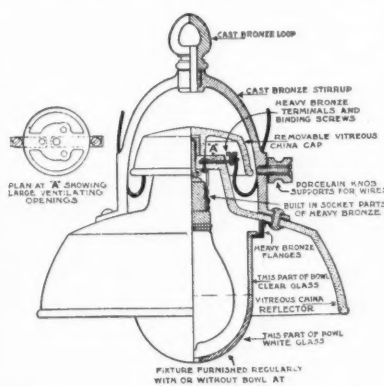
One Style of Brascolite Fixtures

contains the lamp socket in the center. Suspended from this reflector and enclosing the lamp is a white glass diffusing bowl. The fixture emits light in two ways. A considerable portion is diffused through the bowl, while the reflector above serves to reflect direct light from the lamp and reflected light from the inside surface

of the bowl, the surface of the reflector being such that the reflected light is also diffused.

As the bowl is suspended some distance below the reflector, the lamp receives sufficient ventilation. The suspension is by means of three hooks, two of which may be unfastened to lower the bowl to the cleaning position, which permits convenient access to the lamp, the reflector and the interior of the bowl, for thorough cleaning. Aside from the efficiency of the illumination, this type of lamp has the advantage that it is independent of the condition of the ceiling for the effectiveness of the indirect lighting. The Brascolite fixture is made in a number of different styles, thus permitting selection to conform to the architectural treatment of the interior it is to occupy.

The principles embodied in the Brascolite fixture are used in a somewhat modified form in what is known as the Day Way



The Suspended Type Day Way Fixture

with the Brascolite fixture is reproduced in this lamp by the addition of a glass bowl, completely enclosing the lamp, ventilation in this case being supplied by means of two holes through the socket supports. This fixture may be used with either series or multiple circuits with large or small lighting units, thus making it adaptable to almost any form of outdoor service. As the fixture is almost entirely china or glass and the only metal parts are bronze, it offers high resistance to corrosive agencies. The fixtures described above are manufactured by the Luminous Unit Company, St. Louis, Mo.

**FINNISH RAILWAYS.**—At the beginning of 1914 the total mileage of the Finnish State Railways, including 207 miles of line owned by private capital, but operated by the State lines, was 2,537. Finland has 2,765 miles of navigable waterways, of which, with the present facilities, it is estimated that the freight capacity is about 1,600,000 tons a year. The waterways as well as the railways are under the administration of the State.

# General News Department

Baltimore & Ohio piers No. 34 and No. 35 at Locust Point, Baltimore, Md., were destroyed by fire on the night of August 27; estimated loss, including the contents of United States bonded warehouses, over \$500,000.

The loaded car movement on the Atchison, Topeka & Santa Fe last week, 35,244 cars, was 15 per cent greater than the loading for the corresponding week of the previous year and represents the highest record for a week in the history of the company. The increase in miscellaneous traffic was over 4,000 cars.

James J. Hill, in honor of whom a number of men have founded a professorship of transportation in the Graduate School of Business Administration, of Harvard University, has given to the university \$125,000, to be added to the like sum which was given by the founders. The letter of the founders was printed in the issue of the *Railway Age Gazette* for July 16, last, page 134.

The number of freight cars moved over the main line of the Pennsylvania Railroad in the month of October was 204,893, or about 1,000 more than in the preceding heaviest month which was March, 1912. The number of loaded cars included in the October number is 123,105. Shipments of coal are now very heavy. The company has more trainmen in its employ at the present time than ever before in its history.

On the Long Island Railroad in the month of October, 23 persons, while operating automobiles and other vehicles, violated the railroad's mandate to stop before starting over grade crossings. Only three people were injured, but this was due in the majority of cases largely to good luck. Twelve automobiles, five motor trucks, five wagons and one motorcycle make up the list. Twelve of these vehicles, mostly automobiles, plunged wildly through lowered gates, breaking eight of them.

The Nashville, Chattanooga & St. Louis has issued an order requiring that every employee who has anything to do with the handling of, or preparation of, food to be offered to the public in the dining cars or restaurants of the company shall first be examined. These examinations are to be held periodically, and no person who has been subjected to or who is suffering from any communicable disease is permitted to aid in the work, either in the diners or restaurants or private cars.

A meeting of representatives of the five principal railroad brotherhoods held in Faneuil Hall, Boston, last Sunday, was attended by about 1,000 men, said to represent brotherhoods in all parts of the United States. It was given out that a concerted movement was to be started to secure agreements with the railroads to limit the workday to eight hours, double pay to be given for all work done outside these hours. Brotherhood leaders in other important cities of the country are giving expression to this same purpose. The Boston meeting was followed by a dinner at the United States Hotel, at which the governor of Massachusetts was present; and he is quoted as saying: "It seems that the railroads are able to pay more than \$800,000 in this State for the expenses of lobbying, but that they are unable to pay some of their employees a living wage." The governor was a candidate for re-election. On Tuesday of this week the election occurred and he was defeated.

## Export Coal Terminal at Charleston

The Southern Railway has completed its new export coal terminal at Charleston, S. C., at a cost of approximately \$600,000, and coal can now be loaded into ships at Charleston as rapidly and as cheaply as at any other American port. Freight rates have been so adjusted that coal operators shipping through Charleston will be on a parity with those exporting through Norfolk.

The coal handling machinery consists of a car dumper and a

loading tower, which are operated entirely by electric motors. They stand on a steel and concrete pier 375 ft. long fronting on water 30 ft. deep at low tide. The pier is connected with the mainland by a creosoted trestle 3,800 ft. long. Both the car dumper and the loading tower are movable and can be shifted to serve different hatches, so that when a ship is once tied up at the pier it is unnecessary to move it until a full cargo has been received. The capacity of the plant is from 1,500 to 2,000 tons an hour. In connection with the coal pier there is a storage yard of 400 cars capacity.

## Rail Failures in New York

The New York State Public Service Commission, Second district, has written to the principal railroads within its jurisdiction calling attention to the necessity for great care in the inspection of rails in track. There has been a large increase in failures due to internal transverse fissures, the failures reported for the months named during 1914 and 1915, being as follows:

	1914	1915
July .....	12	12
August .....	5	16
September .....	5	32

The letter says that it is extremely essential that employees be cautioned to exert the utmost watchfulness in inspecting the track in order that as many of the rails as possible in which transverse fissures may develop and appear on the surface may be detected before complete failure.

The commission also urges that employees be warned to use great care in passing through automatic block territory after having observed an automatic signal in the stop position. A large number of the failures reported to the commission have been detected by means of the signals.

## Protest Against the Moon Bill

The committee on railway mail pay, Ralph Peters, chairman, has issued a pamphlet of 30 pages, containing a strong protest, addressed to Congress and the public, against renewal of the efforts to pass the Moon mail pay bill. The measure was introduced in the last Congress, but failed to pass, although it was made a rider on the post office appropriation bill. The postmaster general has announced that it will be reintroduced when the new Congress opens in December, and will be pushed for speedy passage. This bill would empower the postmaster general, who is interested in the reduction of the postal deficit, to make the rates for carrying the mails, with the sole limitation that he could not exceed certain sums; and the penalty for each refusal to carry at his price might be \$5,000. The committee claims that the bill is really a delegation of legislative power to the postmaster general. The bill is analyzed paragraph by paragraph. It is shown that from end to end the measure does not specify a single definite rate that the railroads are to be paid, but in each instance leaves the determination of the rate to the postmaster general. It is shown also that supplementary grants of power, conferred by some of the closing paragraphs of the bill, would permit the postmaster general of his own motion to establish other systems of mail transportation totally different from the detailed plan which the bill purports to enact into law. The postmaster general could initiate these plans and put them into effect independently of the will of Congress and make them apply to all but the first-class mail.

## The Trial of the New Haven Directors

Sessions of the Federal Court in New York before which the criminal suit against the eleven New Haven directors is being tried were held on Thursday and Friday of last week and were continued again this week, Wednesday, after a recess over the



holiday. The sessions on Thursday and Friday were taken up largely by a consideration of the acquisition by the New Haven of a number of trolley lines, the government attempting to show that the New Haven tried to monopolize the trolley transportation of New England. Much of the evidence submitted was in the form of the letter books of John M. Hall, president of the road before Mr. Mellen. Among the letters read were a number telling legislators to oppose or favor legislation, offering passes, and proposing other means of taking care of persons favoring the New Haven. One of the most interesting was that written January 21, 1897, to Charles F. Brooker, one of the defendants, saying in part: "Enclosed is a draft of a carefully drawn bill, which I want you to hand quietly to Representative Tucker of your city to be introduced as quietly as possible. This bill, if passed, will make the electric company widen a bridge and given them something to think about besides paralleling the New Haven. Representative Tucker must father the bill and nurse it. In no event must it be known that the New Haven had anything to do with it. We will make it all right with him and will provide some legislative support."

Mr. Mellen on Friday made a statement concerning these letters as follows:

"There was apparently introduced yesterday, under the heading of testimony of Charles S. Mellen a lot of matter that comes from identification of signatures, particularly letters of Judge Hall, the vice-president. I had no knowledge direct or indirect

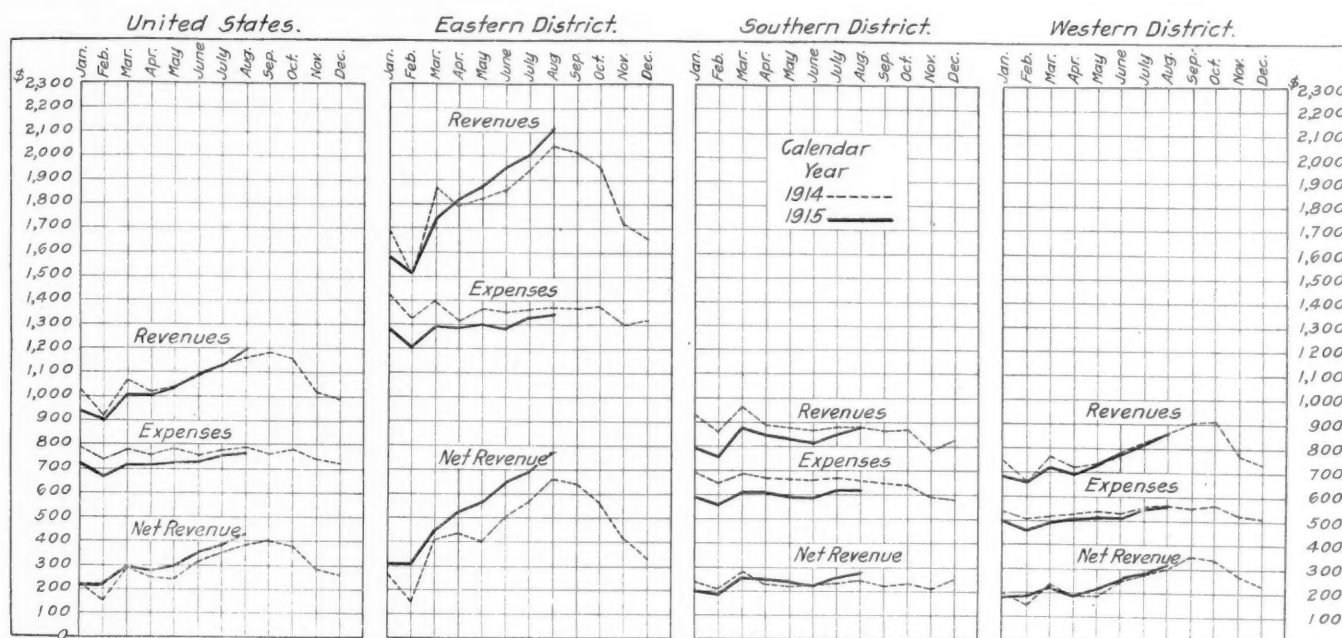
### Summary of Revenues and Expenses of Steam Roads

The Bureau of Railway Economics' summary of revenues and expenses and comments thereon for August, 1915, are as follows:

Net operating income of the railways of the United States for August increased \$39 per mile, or 11.4 per cent as compared with August, 1914. In August, 1914, net operating income per mile was 0.8 per cent less than in August, 1913.

Total operating revenues amounted to \$272,306,183, an increase from 1914 of \$5,232,376. Operating expenses were \$174,879,773, a decrease of \$4,354,631. Net operating revenue amounted to \$97,426,410, an increase of \$9,587,007. Taxes amounted to \$11,600,099, an increase of \$312,530. This left \$85,738,540 for net operating income, available for rentals, interest on bonds, appropriations for improvements and new construction, and dividends. Operating revenues per mile of line averaged \$1,191, an increase of 1.3 per cent; operating expenses averaged \$765, a decrease of 3.0 per cent; net operating revenue per mile averaged \$426, an increase of 10.2 per cent, while net operating income per mile was \$375, an increase of 11.4 per cent. Taxes per mile increased 2.1 per cent. Railways operating 228,716 miles of line are covered by this summary, or about ninety per cent of the steam railway mileage in the United States.

Operating revenues of the eastern railways per mile show an increase of 3.6 per cent as compared with August, 1914, operating expenses decreased 2.1 per cent, net operating revenue increased



Monthly Revenues and Expenses Per Mile of Line in 1914 and 1915

regarding these matters. They come upon me like a burst of thunder. I cannot rest easy with it appearing even to the uninitiated, that I had any knowledge of such things existing, and I am paralyzed at the thought that for ten years I sat within reaching distance of those books and was not blown up."

In reply to a question by R. V. Lindabury of the counsel for the defense, Mr. Mellen also said: "I never had occasion to refer to them. I know of no director or officer who did refer to them. I had not the remotest knowledge that they were in existence until they were read in evidence."

After this Mr. Mellen left the stand and was not cross examined by the defense. On Friday also Charles C. Goodrich, general manager of the Hartford & New York (Steamboat) Transportation Company of which at one time he was president, told of the business of that company. The New Haven in 1901 entered into an agreement with this company concerning rates and confirming the activities of the boat line both as to ports and amended business done. In 1905, however, the New Haven bought it outright.

On Wednesday Mr. Goodrich was cross-examined by Charles F. Choate of counsel for the defense.

15.5 per cent, taxes increased 1.4 per cent, and operating income increased 17.3 per cent.

Operating revenues of the southern railways per mile decreased 1.2 per cent, operating expenses decreased 7.1 per cent, net operating revenue increased 15.9 per cent, taxes increased 2.5 per cent, and operating income increased 18.3 per cent.

Operating revenues of the western railways per mile show an increase of less than one-tenth of one per cent, operating expenses decreased 2.1 per cent, net operating revenue increased 3.8 per cent, taxes increased 2.9 per cent, and operating income increased 3.9 per cent.

The two months of the current fiscal year show an increase in total operating revenues per mile of line of 0.8 per cent as compared with the corresponding period of the preceding year, a decrease in operating expenses per mile of 3.8 per cent, an increase in net operating revenue per mile of 10.9 per cent, an increase in taxes per mile of 1.7 per cent, and an increase in net operating income per mile of 12.3 per cent.

The net operating income per mile increased 21.3 per cent in the east, increased 14.9 per cent in the south, and increased 3.1 per cent in the west.





### Fifty School Boys Killed

President Fairfax Harrison, of the Southern Railway Company reports that during the fiscal year ending with last June, 147 trespassers were killed on the tracks of that road. He urges the development of a public sentiment that will put an end to the hazardous practice of trespassing. He has prepared a map showing the point at which each trespasser was killed and "it looks like a map of the monuments on the Chickamauga battle field." . . . "Fully one-third of those killed were school boys, 'hopping' trains, and a large percentage were valuable wage-earners, walking on the tracks to or from their work. Very few were 'tramps.'"

### The Deadly Automobile

The St. Louis Republic says: "St. Louis contains one-sixtieth of the urban population of the United States, and in October a round dozen of our people were killed in the city in automobile accidents; so that the annual automobile death rate in the cities of the United States would be 8,640, if the St. Louis rate in October should be maintained. All the railroads in this country do not kill many more than this in a year, including accidents to trespassers and in the shops. Leaving out trespassers, the St. Louis automobile death rate in October was worse than anything the railroads ever accomplished, yet we have cried aloud unto heaven against the railroads for their carelessness. Right now in this country there is no activity which needs to have the 'safety first' motto rubbed in, with jail sentences, half so badly as automobiling."

### Pennsylvania Prize Winners

The latest news bulletin issued by the Pennsylvania Railroad contains portraits of four employees of the road who have lately taken prizes: C. Z. Moore, supervisor, Middletown, Pa., and L. R. Fleming, assistant supervisor, who jointly took the first prize for excellent track work this year, and George W. Smith, Jr., and Richard C. Bartley, telegraphers in the general office at Broad street station, Philadelphia, who took prizes at the International Telegraphic Tournament held at San Francisco in connection with the Panama-Pacific Exposition, August 27 and 28. The roadway prizes have already been noticed in the *Railway Age Gazette*. The two telegraphers named have taken prizes before, notably at Boston in 1908. At San Francisco, Mr. Bartley sent 40 railroad messages, without an error, in 28 minutes and 13 seconds, breaking all previous records. He also won the contest of hand versus machine sending, beating the men who used mechanical appliances by which one stroke of the finger makes any number of dots. Mr. Smith won the receiving contest by taking, without break or error, 40 railroad messages in 31 minutes, 12 seconds. Mr. Bartley has been in the service since 1889 and Mr. Smith since 1896. Both are sons of Pennsylvania Railroad employees. In honor of their success at the exposition, the two operators were given a dinner at Philadelphia, on September 7, by the officers and employees of the telegraph department of the road, J. C. Johnson, superintendent of telegraph, acting as toastmaster.

### American Railway Association

The autumn session of the American Railway Association will be held at The Blackstone, Chicago, November 17. Reports will be presented by the committees on Transportation; on Maintenance; on Relations Between Railroads; on Explosives; on Electrical Working; on Legal and Traffic Relations; and on Movement of Empty Cars.

### June Mechanical Conventions

Announcement was made in our issue of October 29, page 769, that a joint meeting of the executive committees of the Master Car Builders' Association, the American Railway Master Mechanics' Association and the Railway Supply Manufacturers' Association would be held at Cleveland, Ohio, on Monday, November 15. It has been decided to change the place of meeting to Chicago, as a number of the members of the executive committees of the two railroad associations will wish to attend a meeting of the Special Committee on Relations of Railway Operation to Legislation in Chicago on the following

day. The joint meeting will be held in the office of Secretary J. W. Taylor at 9:30 a. m. As previously noted, the object of the meeting will be to decide upon the dates for the June conventions as well as the place of meetings.

### Central Railway Club

At the next meeting of the Central Railway Club, to be held on Friday, November 12, 1915, at the Hotel Statler, Buffalo, N. Y., an illustrated paper will be presented on the subject of "Rubber: From the Raw to the Finished Product." An inspection of the Hewitt Rubber Company's plant has been arranged for the afternoon, and an informal complimentary dinner at the Hotel Statler will precede the evening meeting. The ladies are invited to both the dinner and the club meeting.

## MEETINGS AND CONVENTIONS

The following list gives names of secretaries, date of next or regular meetings and places of meeting.

- AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass. Next convention, May 2-5, 1916, Atlanta, Ga.
- AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, 455 Grand Central Station, Chicago. Next meeting, January, 1916, Atlanta, Ga.
- AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D. L. & W., Hoboken, N. J.
- AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, East St. Louis, Ill. Next meeting, June 20-23, 1916, Cincinnati, O.
- AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.
- AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo.
- AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 8 W. 40th St., New York.
- AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. G. McCornoughy, 165 Broadway, New York.
- AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPEFITTERS' ASSOCIATION.—W. E. Jones, C. & N. W., 3814 Fulton St., Chicago.
- AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 75 Church St., New York. Next meeting, November 17, 1915, The Blackstone, Chicago.
- AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 17-19, 1916, New Orleans, La.
- AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention, March 21-23, 1916, Chicago.
- AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Building, Chicago. Annual meeting, June, 1916.
- AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, Illinois Central, Chicago. Annual meeting, July, 1916.
- AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.
- AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. Warren Hunt, 220 W. 57th St., New York. Regular meetings, 1st and 3d Wednesday in month, except July and August, 220 W. 57th St., New York.
- AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Annual meeting, December 7-10, 1915, New York.
- AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, Supt. Timber Preservation, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January 18-20, 1916, Chicago.
- ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—E. R. Woodson, Rooms 1116-8, Woodward Bldg., Washington, D. C. Annual meeting, June 28, 1916, Hotel Statler, Detroit, Mich.
- ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago. Semi-annual meeting with Master Car Builders' Association. Annual convention, October, 1916, Chicago.
- ASSOCIATION OF RAILWAY CLAIM AGENTS.—Willis H. Failing, N. Y. C., 3842 Grand Central Terminal, New York. Next meeting, May 19, 1916, Atlantic City, N. J.
- ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago.
- ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, Soo Line, 112 West Adams St., Chicago. Annual meeting, June 20-22, 1916, St. Paul, Minn.
- ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York. Next meeting, December 14-15, 1915, St. Louis, Mo.
- BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—T. O. Jacobs, H. W. Johns-Manville Co., Chicago. Meetings with American Railway Bridge and Building Association.
- CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.
- CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.
- CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawlor Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Hotel La Salle, Chicago.
- CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual meeting, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.
- ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh, Pa.
- FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, Traffic Manager, R. F. & P., Richmond, Va. Annual session, May 17, 1916, Washington, D. C.
- GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.
- INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. G. Hall, C. & E. I., 922 McCormick Bldg., Chicago. Annual meeting, May, 1916, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1126 W. Broadway, Winona, Minn.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio. Next meeting, August, 1916, Chicago.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—T. I. Goodwin, C. R. I. & P., Eldon, Mo.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York. Annual convention, May 23-26, 1916, Hotel Hollenden, Cleveland, Ohio.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next annual meeting, September 12-14, 1916, Wilmington, Del.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Building, Chicago. Annual meeting, June, 1916.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. W. Kelly, 349 People's Gas Bldg., Chicago. Next convention, March, 1916, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meetings, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. N. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings, 3d Wednesday in month, New York Telephone Bldg., Buffalo, N. Y.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, 410 Masonic Temple Bldg., Peoria, Ill. Regular meetings, 3d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—Claude Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Saturday in month, Kansas City.

RAILROAD MEN'S IMPROVEMENT SOCIETY.—J. B. Curran, Erie R. R., 50 Church St., New York. Meetings, alternate Thursdays, October to May, Assembly Rooms of Trunk Line Association, 143 Liberty St., New York.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York. Annual meeting, December, 1915, Waldorf-Astoria, Hotel, New York.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, 1063 Monadnock Block, Chicago. Meetings with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Fire Ins. Agt., Mobile & Ohio, Mobile, Ala.

RAILWAY REAL ESTATE ASSOCIATION.—Frank C. Irvine, 1125 Pennsylvania Station, Pittsburgh, Pa. Annual meeting, October, 1916, Chicago.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Myers Bldg., Bethlehem, Pa. Next annual convention, September, 1916, Grand Hotel, Mackinac Island, Mich.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, N. Y. C. R. R., Box C, Collingwood, Ohio.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with Master Car Builders' and Master Mechanics' Associations.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 50 Church St., New York. Meetings with Association of Railway Telegraph Superintendents.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. W., Sterling, Ill. Next annual convention, September 19-22, 1916, New York.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SALT LAKE TRANSPORTATION CLUB.—R. E. Rowland, David Keith Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meetings with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—Carl Nyquist, C. R. I. & P., 1134 La Salle St. Sta., Chicago.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga. Next meeting, April, 1916.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 A. M., Piedmont Hotel, Atlanta.

TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEWARK.—John J. Kautzmann, P. O. Box 238, Newark, N. J. Regular meetings, 1st Monday in month, except July and August, The Washington, 559 Broad St., Newark.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings, last Tuesday in month, except June, July and August, Waldorf-Astoria Hotel, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Gen'l Agt., Erie R. R., 1924 Oliver Bldg., Pittsburgh, Pa. Meetings, bi-monthly, Pittsburgh.

TRAFFIC CLUB OF ST. LOUIS.—A. F. Versen, Mercantile Library Bldg., St. Louis, Mo. Annual meeting in November. Noonday meetings October to May.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago. Next convention, June 21, 1916, Toronto, Ont.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, N. Y. C. R. R., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. R. R., East Buffalo, N. Y. Next meeting, September, 1916, Chicago.

UTAH SOCIETY OF ENGINEERS.—Frank W. Moore, 1111 Newhouse Bldg., Salt Lake City, Utah. Regular meetings, 3d Friday in month, except July and August, Salt Lake City.

WESTERN CANADA RAILWAY CLUB.—L. Kon, Immigration Agent, Grand Trunk Pacific, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Building, Chicago. Regular meetings, 3d Tuesday in month, except June, July and August, Karpen Bldg., Chicago.

WESTERN SOCIETY OF ENGINEERS.—E. M. Layfield, 1735 Monadnock Block, Chicago. Regular meetings, 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings. Annual meeting, 1st Wednesday after 1st Thursday in January, Chicago.

## Traffic News

On October 30, service on the "Pacific Limited" of the Chicago & North Western was amplified by the addition of an all-steel observation buffet lounging car.

The Chicago, Rock Island & Pacific on October 31 discontinued its trains No. 69 and No. 70, running between Kansas City and St. Paul and Minneapolis.

The Union Pacific on October 31 discontinued two of its trains running between Kansas City and the Pacific coast by way of Denver; No. 101 westbound, and 120, eastbound.

The Chicago, Milwaukee & St. Paul has announced that, beginning on November 7, sleeping cars will be run between Chicago and Portland, Ore., on the "Columbian" train in connection with the Oregon-Washington Railroad & Navigation Company from Spokane to Portland. The departing time from Chicago will be changed from 10:10 a. m. to 8:30 a. m., and the train will arrive two hours earlier at Spokane, Seattle and Tacoma.

The receivers of the St. Louis & San Francisco, Wabash, Missouri, Kansas & Texas and Missouri Pacific, all of which are in the hands of the courts, were among the speakers at a dinner given by the Commercial Club of St. Louis on October 27, and in addresses pointed out the reasons for the present condition of the roads. B. F. Bush, receiver of the Missouri Pacific, declared that "in no other way than by an increase of rates can the carriers establish and maintain a credit so essential in the obtaining of new money to provide the required facilities and equipment." Other speakers who spoke along similar lines included J. W. Lusk, receiver of the St. Louis & San Francisco, C. E. Schaff, receiver of the Missouri, Kansas & Texas, E. F. Kearney, receiver of the Wabash, Festus J. Wade and E. C. Simmons.

Passenger officers of the St. Louis-Kansas City lines have decided to discontinue the midnight passenger trains between the two cities, and the new tables became effective on October 31. In January, 1914, the St. Louis-Kansas City lines discontinued their midnight trains and ran the remaining night trains on a 10½ hour schedule. On June 1, 1915, the midnight trains were restored. In a statement issued to the public it is explained that the roads have carefully watched the effect of this additional service and have determined that the volume of business does not justify running two night trains. They have therefore decided to run each one night train on a schedule of about nine hours. On some of the lines the trains leave both terminals at 11 p. m., arriving at 8 a. m. On others they leave both terminals between 9 and 11 o'clock, and arrive between 7 and 8. This meets the criticism directed against the former plan, that passengers only had one choice, because under the new adjustment there will be four different leaving times.

### The Empire State Express

This famous train of the New York Central, the first regular long distance train in America to run at over 50 miles an hour, including stops, has begun its twenty-fifth year. It has covered a distance of 6,518,600 miles, equal to 14 round trips to the moon, and has carried approximately 8,000,000 passengers safely to their destinations. The record during these 24 years has been a remarkable one. Not one of its passengers has been fatally injured. One of its engineers for sixteen years was Dennis J. Cassin, who last year was awarded the Harriman bronze medal in recognition of his unblemished record of safety.

When the Empire State Express was first placed in service it weighed only 230 tons; now it weighs 780 tons. It was drawn by engines of the "870" class, and later by the famous "999," the locomotive that took the prize at the Chicago World's Fair. Nowadays that locomotive looks like a toy in comparison with the giant Pacific type, and it could hardly start the train, much less haul it on its fast schedule.



## Commission and Court News

### INTERSTATE COMMERCE COMMISSION

#### Classification of Chairs

##### *Opinion by the commission:*

A proposed increased rating on common chairs in carloads in western classification territory, from fourth class, minimum 12,000 lb., to third class, minimum, 10,000 lb., is found not justified. (36 I. C. C., 243.)

#### Complaint Dismissed

*A. B. Crouch Grain Company et al v. Atchison, Topeka & Santa Fe et al. Opinion by the commission:*

The commission holds reasonable, the rule in various tariffs of the southwestern lines providing for deductions in the adjustment of claims for loss of grain in transit of certain percentages of loading weights as representing natural shrinkage. (36 I. C. C., 265.)

### STATE COMMISSIONS

The Railroad Commission of Texas has granted the application of the St. Louis Southwestern for authority to remove and abandon "Morrill Spur," the order to become effective November 10. Chairman Allison Mayfield and Engineer R. D. Parker, of the commission, made an inspection of the line. Morrill Spur is seven miles in length, of which only 4½ miles is in operation. It was originally built for the accommodation of the Morrill Orchard Company.

The New York Public Service Commission, Second district, has ordered the New York Central to reconstruct a track over the coal pit of the Dundee Electric Lighting Plant, in the village of Dundee, Yates county. The railroad discontinued the track when the trestle over the coal pit was reported unsafe and refused to renew it except under an agreement making the lighting plant responsible for all detriment, damage suits, etc., and calling for \$5 annual rental; and the railroad proposed to reserve the privilege of removing the track on 30 days' notice. The road has now offered a new contract in which the indemnity clause is replaced by one in consonance with a recent decision of the commission in a similar case. The commission rules that the \$5 annual rental is reasonable, inasmuch as the structure is wholly on the railroad's right of way. It refuses, however, to authorize the termination of the contract on 30 days' notice. The commission has power to order the installation of a side-track or its continuance; but it permits a clause allowing discontinuance, "in accordance with law" on 30 days' notice.

### COURT NEWS

Attorney General Barker, of Missouri, has announced that he is preparing to file suit in the United States Supreme Court to recover \$24,000,000 in alleged overcharges collected by the railroads of Missouri while the two-cent passenger fare and state freight rate laws were in litigation. A similar suit was dismissed by the Missouri Supreme Court.

The United States District Court at Philadelphia, October 28, filed its decree, in pursuance of the decision handed down last June, to the effect that the Central of New Jersey must divest itself of its ownership of the Lehigh & Wilkes Barre Coal Company. It is reported from Washington that the government will appeal the case to the Supreme Court, on the ground that the decision does not go far enough. The government aims to compel the separation of the Central of New Jersey from the Philadelphia & Reading.

#### "Engaged in Interstate Commerce"

The Alabama Supreme Court holds that an employee working at a coal chute coaling engines on an interstate railroad and required to serve interstate and intrastate trains is engaged in

"interstate commerce" within the federal employers' liability act.—*Southern v. Peters, Ala.*, 69 So. 611.

#### Delivery on Forged Bill of Lading

A bill of lading of a car load shipment consigned the freight to the order of Botsford & Barrett, and read "Botsford & Barrett, per F. M. G., Shipper, Lapeer Grain Co., Churchill." Delivery was made by the final carrier on a forged bill of lading. In an action against the initial carrier for the value of the shipment, the Michigan Supreme Court holds that the bill of lading indicated that the Lapeer Grain Company, as well as Botsford & Barrett, were shippers, and, as such shippers, their indorsement was necessary before the carrier was justified in making delivery, and a delivery on a forged bill of lading was no defense.—*Churchill v. Grand Trunk Western (Mich.)*, 154 N. W. 106.

#### Injuries to Persons on Track—Burden of Proof

A Tennessee statute declares that every railroad company shall keep a lookout, and when any person or any other obstruction appears on the track, take all means to prevent an accident; and that no company that observes such precautions shall be responsible for damage done to persons on its road. The Supreme Court of the state holds that one suing for the death of her intestate, killed on the defendant's road, has the burden of showing that the deceased was on the track or so near it as to be an obstruction before the railroad company is bound to show that it observed the statutory precautions.—*Cincinnati, N. O. & T. P. v. Brock (Tenn.)*, 178 S. W. 1115.

#### Instructions of Drover—Reasonableness

The Nebraska Supreme Court holds that a railroad is not bound to comply with every arbitrary request made by a shipper of live stock as to the place where the animals shall be unloaded and fed while in transit. It is only obliged to comply with such requests as may be reasonable; reasonableness to be decided by the jury. Cattle were shipped a distance requiring only 21 hours for the journey and no circumstances were present making it necessary that the animals be unloaded short of destination. It was held not to be negligence, as a matter of law, to fail to comply with a request of the shipper, made to the agent at point of shipment, that the cattle be unloaded at an intermediate point for food, water and rest.—*Keat v. C. & N. W. (Neb.)*, 154 N. W. 220.

#### Franchise Taxes on "Doing Business"—Lease

A railroad corporation incorporated under the New York Stock Corporation Law to take and possess the property and franchises of a domestic railroad company owning and operating a railroad in the state, acquired the property and franchises on a foreclosure sale, and leased the property and franchises, other than the franchise to exist as a corporation, for 999 years. Since the lease, it has held meetings of the stockholders for election of directors, who elected officers, and made annual capital stock reports, kept corporate accounts, and maintained corporate organization and an office in a sister state, while the railroad was operated by the lessee. The New York Appellate Division holds that it did business in the state, within New York Tax Law, section 182, imposing a tax for the privilege of "doing business" in the state.—*People ex rel. Lehigh v. Sohmer*, 154 N. Y. Supp. 1054.

#### Damage by Fire Caused by Water Reaching Unslaked Lime

When a car containing a shipment of goods reached the carrier's yards, the water in a river, by reason of an unusual freshet, was 2½ feet higher than the highest previous record. The water continued to rise until it reached unslaked lime in another car in the yards, causing a fire which destroyed the goods. In an action for damages the New York Appellate Division holds that the carrier's negligence, if it was negligent in placing the goods near the car of lime, was the proximate cause of their destruction. Whether the placing of the car near the car of unslaked lime was negligence was a question for the jury, as the carrier owed plaintiff an active duty to use reasonable care not to expose his property unnecessarily, and it knew or was chargeable with knowledge that, if the water reached the lime, a fire would naturally result, and presumably it knew or should

have known the contents of the car containing the lime.—*Barnet v. New York Central*, 1153 N. Y. Supp. 374.

#### Alabama Bonner Anti-Shipping Act Held Valid

A liquor dealer in Pensacola, Fla., filed a bill in the Alabama courts against a common carrier to compel it to receive at and transport from Pensacola to Ramer, Ala., a shipment of six quarts of whisky. The complainant, having received an order, accompanied by the requisite cash price, from a resident of Ramer, who was one of the complainant's customers, for the whisky, tendered the shipment to the defendant. The latter refused to receive it, assigning as the only reason for its refusal that the law of Alabama forbade the carrier's transportation and delivery to one consignee at a point in "dry territory" in Alabama of more than one quart of whisky in any four consecutive weeks, even though the shipment is tendered in another state. Ramer is in "dry territory." It was conceded that the shipment was only intended for the personal use of the consignee and his family. The carrier's refusal was based on the Bonner Anti-Shipping Bill, which became effective in Alabama on February 8, 1915. The Alabama Supreme Court holds that the act is a valid exercise of the police power of the state, and does not conflict with either the state or the federal Constitution. The Webb-Kenyon Law, which the court holds to be within the power of Congress to enact, prohibits the entering in interstate commerce of intoxicating liquors where the purpose is unlawful under valid state statutes, and any valid exercise of the police power of the states is not a regulation of interstate commerce. A decree granting relief was therefore reversed and the bill dismissed.—*Southern Express Co. v. Whittle* (Ala.), 69 So. 652.

#### Right of Way Granted by Congress Cannot Be Alienated—Adverse Possession

In 1862 the United States granted to the Central Pacific a strip of land 400 feet wide through the public lands of the United States in California for a right of way; also the odd-numbered sections of land lying within 10 miles of the line. It built its road on the strip, enclosing only 100 feet. It sold parts of a section through which the road ran to one Droge, who has remained in possession of that part of the 400-foot strip lying outside of the fences ever since their erection. The railroad never exercised any acts of ownership over these remaining portions. It has now claimed them in an action to recover possession of real property. The chief defenses were adverse possession for 41 years, with payment of taxes for that period, and that the action was barred by limitations and estoppel. The California Supreme Court holds that the action of Congress is a conclusive determination by the United States that the entire strip is necessary for railroad purposes, and the company may not alienate or dispose of any part of it for any other purposes. This was previously decided in *Northern Pacific v. Townsend*, 190 U. S. 267, 23 Sup. Ct. 671. The United States Supreme Court has established the rule that the federal courts will construe the grants of the general government without reference to the rules of construction adopted by the states for their grants. The effect of the grant in question was therefore to be determined in accordance with the decisions of the federal courts. The grant to the railroad was an estate in fee for a special public purpose, subject only to reverter at the instance of the United States if the public use were not properly maintained.

It was claimed that the act of Congress of June 24, 1912, relating to Union Pacific lands in possession of individuals, was effective to perfect this California defendant's title, but the claim was not sustained. The act of 1912 was specially made applicable to the grant to the Union Pacific, and could not be extended by implication to the Central Pacific. Moreover, it has been decided that the act of 1912 is not retroactive. The railroad was not estopped from claiming the land because the defendant had paid a price for it based on the entire acreage of the subdivision, and that he had improved and cultivated the land while it was in his possession. He knew, at the time of the purchase, of the act of Congress. Moreover, estoppel could not operate to discontinue a public use, and divest a title which the company could not alienate or dispose of directly or indirectly. Judgment for the company was affirmed.—*Central Pacific v. Droge* (Cal.), 151 Pac. 663.

## Railway Officers

### Executive, Financial, Legal and Accounting

Charles A. Vilas has been appointed valuation attorney of the Chicago & North Western, effective November 1.

The federal court has appointed James A. Seddon special master in the receivership case of the Missouri, Kansas & Texas.

M. H. Smith, president of the Louisville & Nashville at Louisville, Ky., has been elected president also of the Lexington & Eastern, succeeding Arthur Cary. W. L. Mapother, first vice-president of the Louisville & Nashville, has been elected vice-president also of the Lexington & Eastern. J. H. Ellis, secretary of the Louisville & Nashville, and formerly also vice-president of the Lexington & Eastern, is now secretary of both roads, and W. M. Thompson is treasurer of both roads. All with headquarters at Louisville, Ky.

N. D. Maher, heretofore vice-president in charge of operation of the Norfolk & Western, with office at Roanoke, Va., has had his title changed to first vice-president, and in addition to his



N. D. Maher

duties as head of the operating department will, in case of the temporary absence or incapacity of the president, perform all the duties and exercise all the powers of the president. Mr. Maher was born at Blairsville, Pa., and began railway work in 1871. For two years he was engaged in making surveys on the Pittsburgh, Virginia & Charleston, and then was clerk in the office of the superintendent of transportation at Altoona, Pa., of its successor, the Pennsylvania Railroad. From 1874 to 1883, he was clerk in the general superintendent's office of the same road, and then to August, 1889, was

chief clerk to general manager of the Norfolk & Western. He subsequently served for one year as trainmaster of the Flat Top division, and then to June, 1901, was superintendent of the Pocahontas division of the same road. He then went to the Seaboard Air Line as general superintendent at Portsmouth, Va., and in January, 1903, returned to the service of the Norfolk & Western as general superintendent, remaining in that position until the following February, when he was promoted to general manager. From July, 1907, to November, 1912, he was also second vice-president, and since that time was vice-president in charge of operation of the same road, with office at Roanoke, Va.

V. D. Skipworth, assistant general manager of Sulzberger & Sons Company, Chicago, was recently elected a director of the Chicago & Alton. Mr. Skipworth was born on October 21, 1874, at Point Pleasant, Mo., and entered railway service in 1891 with the Kansas City, Osceola & Southern, now part of the St. Louis & San Francisco system. He became a telegraph operator and was successively agent, train despatcher, superintendent and assistant general freight and passenger agent of this road. From 1899 to 1908 he was manager of the Cold Blast Transportation Company and the Lackawanna Livestock Transportation Company, and since 1908 he has been president and manager of these companies, representing the interests of the packinghouse of Sulzberger & Sons Company.

### Operating

A. W. Woodruff, trainmaster of the Union Pacific at Green River, Wyo., has been transferred to Ogden, Utah, where he will



take over the duties of S. R. Toucey, promoted. The office of assistant superintendent at Ogden has been abolished. R. E. Brooks, chief despatcher at Green River, Wyo., has been promoted to trainmaster, vice Mr. Woodruff. Effective November 1.

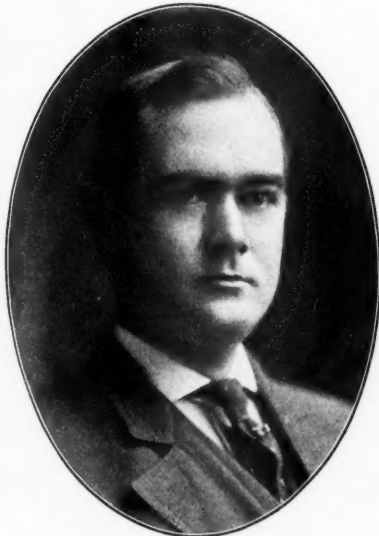
James F. Murphy, whose appointment as general manager of the Missouri Pacific-St. Louis, Iron Mountain & Southern has been announced, was born on April 6, 1870, at Peoria, Ill. He was educated in the common schools and entered railway service in 1887. In 1889 he left his position as yard clerk for the Peoria & Pekin Union to become a brakeman on the Chicago & Alton. In 1890 he became a switchman for the Peoria & Pekin Union, and from 1891 to 1897 served as yard clerk and switchman for the Kansas City, Ft. Scott & Memphis. From 1897 to 1901 he held the positions of assistant yardmaster, general yardmaster and trainmaster of terminals for the Kansas City Southern, at Kansas City, Mo. In 1901, he was appointed general yard-



J. F. Murphy

master of the St. Louis & San Francisco, at Springfield, Mo., and in 1902, became superintendent of terminals for the Kansas City Southern, at Kansas City, Mo. In November, 1905, he entered the service of the Missouri Pacific as trainmaster, with headquarters at Coffeyville, Kans. On January 15, 1907, he was promoted to superintendent of the Memphis division, with headquarters at Wynne, Ark. Later he was transferred to the Central division of the Iron Mountain, and thence to the Arkansas division. On June 19, 1911, he was promoted to general superintendent of the Eastern district of the Missouri Pacific, with headquarters at St. Louis, Mo. He continued in this position until his recent appointment as general manager of the system.

John Cannon, whose appointment as general superintendent of the Eastern district of the Missouri Pacific-St. Louis, Iron Mountain & Southern, has been announced, was born on May 6, 1872, at Cairo, Ill. He was educated in the public schools and entered railway service in 1886 as a laborer in the mechanical department of the Illinois Central. Until May 1, 1892, he served as messenger in the superintendent's department and held various clerkships in the same department; from May 1, 1892, to 1894, he was chief clerk to the assistant superintendent of the Chicago division. From 1894 to December 1, 1901, he was chief clerk to the superintendent of the Amboy and St. Louis divisions; from December 1, 1901, to the fall of 1903, he was chief clerk



J. Cannon

to the general superintendent of transportation; from 1903, to June 1, 1904, assistant trainmaster of the St. Louis division; from June 1, 1904, to January, 1905, chief clerk to the general manager; from January to October, 1905, trainmaster of the Springfield and Chicago divisions. In October, 1905, he entered the service of the Missouri Pacific-St. Louis Iron Mountain &

Southern as superintendent of the Southern Kansas division at Coffeyville, Kan. Since then he has been transferred in the same capacity to Little Rock, Ark., DeSoto, Mo., Poplar Bluff, Mo., and Sedalia, Mo. In October, 1913, his headquarters as superintendent of the Eastern division were changed from Sedalia, Mo., to Springfield. His recent promotion will change his office to St. Louis, Mo.

Andrew P. Titus, who was appointed general manager of the Chicago & Alton on November 1, was born on April 11, 1873, on a farm near Princeton, N. J. He was educated at Princeton preparatory school and at Princeton College. He entered railway service on July 1, 1890, in the car department of the Lake Shore & Michigan Southern, at Cleveland, Ohio. From 1893 to 1895, he was employed by a mining company in Mexico, and in June, 1895, returned to the Lake Shore at Cleveland, remaining there until May, 1900. From May, 1900, to November, 1905, he was car distributor and chief clerk to the superintendent of car service of the Wheeling & Lake Erie; from November, 1905, to May, 1907, he was superintendent of car



A. P. Titus

service of the same road, at Pittsburgh, Pa. From May, 1907, to July 1, 1912, he was assistant superintendent in charge of transportation at Canton, Ohio, and from the latter date to August, 1912, superintendent of the Toledo division of the same road. From August, 1912, to November 1, 1915, he was general superintendent of the Chicago & Alton, with headquarters at Chicago, Ill. The office of general superintendent has been abolished.

Lawrence A. Downs, superintendent of the Kentucky division of the Illinois Central, who has been appointed general superintendent of all lines south of the Ohio river with headquarters at New Orleans, La., was born on May 9, 1872, at Greencastle, Ind., and graduated from Purdue University in 1894. The following February he began railway work with the Vandalia Railroad, and from March, 1896, to 1898, was in an engineering party on the Illinois Central. He then served as roadmaster from 1898 to March, 1907, on the Amboy, the Louisville, the Louisiana, the Springfield and the Chicago divisions. In March, 1907, he was appointed assistant chief engineer maintenance of way, remaining in that position until December 6, 1910, when he was ap-



L. A. Downs

pointed superintendent of the same road, and now becomes general superintendent of all the lines south of the Ohio river as above noted.

S. H. Barnes, general superintendent of the Missouri, Oklahoma & Gulf at Muskogee, Okla., having resigned, this office has been abolished and H. C. Ferris, one of the receivers, will assume the duties of chief operating officer with W. G. Humphrey, purchasing agent, as assistant chief operating officer. E.

A. Dewey, trainmaster at Muskogee, has been appointed superintendent and C. L. Bushnell has been appointed car accountant.

C. M. Walton has been appointed assistant trainmaster of the First and Second districts of the Grand Trunk, with headquarters at Island Pond, Vt.

L. A. Downs, superintendent of the Kentucky division of the Illinois Central, has been appointed general superintendent of all lines south of the Ohio river, with headquarters at New Orleans, La. He succeeds L. W. Baldwin, who has been appointed general manager of the Central of Georgia, with headquarters at Savannah, Ga. A portrait of Mr. Baldwin and a sketch of his railway career were published in the *Railway Age Gazette* of February 5, 1915, page 248.

T. J. Jones, superintendent of the Wabash at Moberly, Mo., has been appointed superintendent of transportation, with office at St. Louis, Mo., in place of H. Eicke, who has been appointed superintendent of the Chicago Terminal division, with office at Chicago, Ill., in place of H. W. Ballou, who at his own request has been granted leave of absence, on account of ill health, and W. H. Eckard, trainmaster at Stanberry, Mo., has been appointed superintendent of the Moberly division, with office at Moberly, in place of Mr. Jones, and G. S. Ward has been appointed chief special agent, with office at St. Louis, Mo.

William H. Penrith, who was appointed assistant general manager of the Chicago & Alton on November 1, was born on November 4, 1875, at St. Paul, Minn. He was educated in the grammar and high schools at Minneapolis, Minn., and entered railway service on June 1, 1897, with the Minneapolis & St. Louis. From June 1, 1897, to December 31, 1899, he held various clerical positions in the stores department of that railroad. From January 1, 1900, to July 31, 1902, he was chief clerk of the stores department; from August 1, 1902, to October 31, 1912, he was chief clerk of the mechanical department. From November 1, 1912, to February 28, 1914, he was general statistician in the office of the vice-president and general manager. On March 1, 1914, he left the service of the Minneapolis & St. Louis to become special statistician in the office of the president of the Chicago & Alton, at Chicago, Ill. He remained in this position until his recent appointment as assistant general manager. His headquarters will continue to be at Chicago.

#### Traffic

H. A. Johnson, whose appointment as traffic manager of the Colorado & Southern has been announced, entered railway service as an office boy in the general freight office of the Missouri, Kansas & Texas at Sedalia, Mo. From there he went to St. Louis, Mo., where he was chief clerk to the general freight agent of the Missouri Pacific; on December 4, 1882, he was appointed assistant general freight agent of that railroad, and on August 1, 1884, was appointed commercial agent, with headquarters at Chicago, Ill. On November 1, 1885, he was transferred to Atchison, Kans., and on January 1, 1886, was appointed assistant general freight agent of the Union Pacific. On January 1, 1889, he became general freight agent of the Kansas City, Ft. Scott & Memphis, now a part of the Frisco lines. He remained in this position until January 1, 1890, when he was appointed assistant general freight agent of the Union Pacific at Denver, Colo.; in July of the same year he was appointed general agent of the same road with headquarters at San Francisco, Cal. In August, 1892, he became traveling freight agent of the Great Northern, with office at Spokane, Wash., and in February, 1893,



H. A. Johnson

was promoted to division freight and passenger agent of the Pacific division of that road, with headquarters at Seattle, Wash. On January 1, 1894, he was appointed general agent in the freight department of the Union Pacific at Denver, Colo. On February 1, 1899, became general freight agent of the Colorado & Southern with office at Denver, and on March 1, of the same year, his jurisdiction was extended over the passenger business and his title changed to general freight and passenger agent. He held this position until October 12, 1915, when he was promoted to traffic manager of the same railroad.

H. R. Wilson has been appointed general freight and passenger agent of the Mississippi Central, with office at Hattiesburg, Miss., vice R. D. Moore, resigned.

W. B. McGroarty, agent of the freight department of the Southern Railway and the Piedmont Air Line at Baltimore, Md., has been appointed general agent, with office at Baltimore.

E. A. Peacock has been appointed commercial agent of the Trinity & Brazos Valley, with office at Ft. Worth, Texas. J. E. Meroney has been appointed commercial agent at Corsicana, Texas.

Roy L. Stall, district passenger solicitor of the Pennsylvania Railroad at New York, has been appointed division passenger agent of the Pittsburgh district, with office at Pittsburgh, Pa., succeeding Edgar Yungman, promoted.

Frank A. Hart, general agent of the Chicago, Burlington & Quincy, at Clinton, Iowa, has been appointed division freight and passenger agent, with headquarters at Quincy, Ill., and H. R. Freed has been appointed general agent at Clinton, vice Mr. Hart.

L. D. McCollum, commercial agent of the Atlantic Coast Line at Augusta, Ga., has been appointed commercial agent, with office at Columbia, S. C., vice D. Y. Monteith, resigned to engage in other business, and J. H. Kinard has been appointed commercial agent, with office at Augusta, vice Mr. McCollum.

#### Engineering and Rolling Stock

J. W. Baum, general foreman of the Lake Erie, Franklin & Clarion, at Clarion, Pa., has been appointed master mechanic, a new position, and the position of general foreman has been abolished.

R. A. Billingham, master mechanic of the Tennessee Central, at Nashville, Tenn., has been appointed mechanical superintendent, and the office of master mechanic has been abolished.

R. G. Jones, assistant engineer on the Northern division of the Grand Rapids & Indiana, at Grand Rapids, Mich., has been promoted to division engineer on the Southern division, at Ft. Wayne, Ind.

C. W. Hixson, signal supervisor of the Vandalia, at Terre Haute, Ind., has been appointed signal supervisor of the Pennsylvania Lines, with headquarters at Chicago, Ill., vice A. J. Seifert, deceased.

James F. McNamara, assistant roadmaster of the Yazoo & Mississippi Valley, at Greenwood, Miss., has been promoted to roadmaster of the Minnesota division of the Illinois Central, with office at Dubuque, Iowa, vice Thomas Quigley, transferred. Effective October 25.

H. H. Sheffer has been appointed signal supervisor of the Western division of the El Paso & Southwestern, with headquarters at Douglas, Ariz., and S. E. Tomlinson has been appointed signal supervisor of the Eastern division, with headquarters at Carrizozo, N. M. Effective November 1.

W. Homuth, formerly signal inspector of the Chicago & North Western, has been appointed assistant signal supervisor of the Chicago terminal, relieving E. E. Schultz, who has been assigned to duties as engineer in the office of the signal engineer. R. B. Arnold, signal inspector, has been appointed assistant engineer in charge of valuation.

J. L. Taylor, Jr., assistant division engineer of the Pennsylvania Lines West at New Castle, Pa., has been appointed assistant division engineer of the Pittsburgh division with office at Pittsburgh. R. D. McKeon, assistant division engineer of the Vandalia Railroad at Logansport, Ind., has been appointed assistant division engineer of the Erie and Ashtabula division of the Pennsylvania Lines West with office at New Castle, and



E. H. May, an assistant of the engineering corps of the Indianapolis division of the Pennsylvania Lines West, has been promoted to assistant division engineer of the Michigan division of the Vandalia Railroad, with office at Logansport, Ind.

R. H. Pinkham, assistant supervisor of the Pennsylvania Railroad, at Derry, Pa., has been promoted to division engineer of the Renovo division, with office at Renovo. H. D. Stowe, supervisor at Dunkirk, N. Y., and G. W. Curtiss, supervisor at Shamokin, Pa., have been appointed pilot engineers in the office of the valuation engineer, both with headquarters at Philadelphia.

W. E. Brown, supervisor of the Middle division of the Pennsylvania Railroad, at Hollidaysburg, Pa., has been appointed supervisor of the Pittsburgh division, with office at Derry, Pa. A. G. Follette, supervisor at Woodbury, N. J., has been appointed supervisor of the Shamokin division, with office at Shamokin, Pa. C. E. Whitlock, formerly supervisor of the Trenton division, and later in the office of the assistant to the general manager at Philadelphia, has been appointed supervisor of the Philadelphia Terminal division, with office at Philadelphia. H. A. John, supervisor at Salamanca, N. Y., has been appointed supervisor of the West Jersey & Seashore, with office at Woodbury, N. J. T. K. Minsker, assistant supervisor of the Pennsylvania Railroad at Bowie, Md., has been promoted to supervisor of the Buffalo division, with office at Dunkirk, N. Y., and F. X. Bradley, assistant supervisor at Derry, has been promoted to supervisor of the Allegheny division, with office at Salamanca, N. Y.

Joseph Weidel, whose appointment as valuation engineer of the Atchison, Topeka & Santa Fe was announced in these columns in August, has recently had his jurisdiction extended over the Gulf, Colorado & Santa Fe. Mr. Weidel started his professional career in 1895 as a draftsman in New York City. In 1899 he was employed as an assayer by the Buck Exploration Company at Durango, Mexico. From 1900 to 1902 he was employed by the Santa Fe in various capacities in Colorado, New Mexico and Kansas. In 1903 he was in the service of the Mexican Central as division engineer in the states of Coahuila and Vera Cruz. From 1904 to 1905 he was assistant engineer on the Santa Fe, and in 1906 construction engineer for the Hally & Swink Railway in Colorado. Returning to the Santa Fe he served one year as engineer on construction of the Raton tunnel at Trinidad, Colo., and two years as office engineer at Topeka, Kan. In 1912 and 1913, he had charge of the construction of the Pecos & Northern Texas, from Lubbock, Tex., to Texico, N. M. In 1914 he returned to the Santa Fe as an assistant engineer.

#### Purchasing

J. L. Woods, assistant purchasing agent of the Nashville, Chattanooga & St. Louis, at Nashville, Tenn., has been appointed purchasing agent, vice A. C. Taylor, assigned to other duties.

#### OBITUARY

John Kirk, superintendent of the Gary division of the Elgin, Joliet & Eastern, died at Gary, nd., on November 2.

Daniel Elliott, division superintendent of the Atchison, Topeka & Santa Fe, at Amarillo, Tex., died on October 19.

Gardner I. Israel, general agent of the Delaware & Hudson, at Chicago, Ill., died on October 25, at the age of 38.

Thomas McGuire, division freight agent of the Pere Marquette at Grand Rapids, Mich., died in that city on October 23. He had been in the service of the railroad since 1894.

C. A. Anderson, trainmaster of the Chicago, Milwaukee & St. Paul at Mason City, Iowa, died on October 31 as the result of being run down by a switching locomotive in the yard.

H. M. McCartney, well known among railroad builders, died at Los Angeles, Cal., on October 16. During the construction of the Western Pacific he held the position of assistant chief engineer and also figured prominently in the construction of the Northern Pacific, the San Pedro, Los Angeles & Salt Lake and the Union Pacific. More recently he was connected with the land department of the Southern Pacific Company.

## Equipment and Supplies

### LOCOMOTIVE BUILDING

THE GEORGIA, SOUTHERN & FLORIDA is in the market for 2 passenger locomotives.

THE STANDARD OIL COMPANY, Whiting, Ind., is inquiring for prices on one switching locomotive.

THE RARITAN RIVER has ordered one Mikado type locomotive from the Baldwin Locomotive Works.

THE ALLEGHENY STEEL COMPANY has ordered one switching locomotive from the Baldwin Locomotive Works.

THE DETROIT TERMINAL has ordered one Consolidation type locomotive from the Baldwin Locomotive Works.

THE PORT HURON SOUTHERN has ordered one six-wheel switching locomotive from the Baldwin Locomotive Works.

THE PITTSBURGH & LAKE ERIE has ordered 10 Mikado type locomotives from the American Locomotive Company.

THE SUMPTER VALLEY has ordered one ten-wheel and one Mikado type locomotive from the Baldwin Locomotive Works.

THE EAST TENNESSEE & WESTERN NORTH CAROLINA has ordered one ten-wheel type locomotive from the Baldwin Locomotive Works.

THE WALTERBORO LUMBER COMPANY, Thayer, S. C., has ordered one Prairie type locomotive from the Baldwin Locomotive Works.

THE UNITED STEEL COMPANY, Canton, Ohio, has ordered one four-wheel switching locomotive and one six-wheel switching locomotive from the Baldwin Locomotive Works.

THE INTERSTATE RAILROAD, reported in the *Railway Age Gazette* of October 22 as having ordered 2 locomotives from the Baldwin Locomotive Works, has increased that order to 3 Consolidation type locomotives.

THE BETHLEHEM STEEL COMPANY has ordered 2 eight-wheel switching locomotives from the American Locomotive Company. These locomotives will have 22 by 28 in. cylinders, 51-in. driving wheels and a total weight in working order of 196,000 lb.

THE BALTIMORE & OHIO, reported in the *Railway Age Gazette* of October 22 as having ordered one Mallet type locomotive from the Baldwin Locomotive Works, has increased this order to 15 Mallet (2-8-8-2) type locomotives and has also ordered 15 Mallet type engines from the American Locomotive Company.

THE NEW ORLEANS & NORTH EASTERN, reported in the *Railway Age Gazette* of October 22 as having ordered 4 Mikado type locomotives from the Baldwin Locomotive Works, has increased that order to 6 locomotives, two of which will be used on its own lines and four on the Vicksburg, Shreveport & Pacific.

THE PENNSYLVANIA RAILROAD was noted in last week's issue as having ordered 75 Mikado type locomotives from the Baldwin Locomotive Works. These engines are ordered on the 1916 equipment program, and are to be used on the Lines East of Pittsburgh. They are to be of the L-1-s type, and will be similar to the locomotive described in the *Railway Age Gazette* of July 3, 1914, page 12.

THE CENTRAL OF GEORGIA, as stated in a recent issue, has ordered 8 Mikado type locomotives and 4 Pacific type locomotives from the Lima Locomotive Corporation. The Mikado type engines will have the same principal dimensions as those ordered by the Illinois Central. The Pacific type locomotives will have 23 by 28-in. cylinders, 69-in. driving wheels and a total weight of 222,300 lb.

THE ILLINOIS CENTRAL, as stated recently, has ordered 47 Mikado type locomotives from the Lima Locomotive Corporation, all of which will have 27 by 30-in. cylinders, 63-in. driving power of 51,630 lb. and a total weight in working order of 284,400 lb. The 3 Santa Fe type locomotives, ordered from the American Locomotive Company, will have 29 by 32-in. cylinders,

63-in. driving wheels, a weight on driving wheels of 274,000 lb., a tractive effort of 67,173 lb. and a total weight in working order of 346,000 lb.

THE PEKIN-KALGAN RAILWAY has ordered 4 Mikado type and 2 Pacific type locomotives from the American Locomotive Company. The Mikado type locomotives will have 20 by 28 in. cylinders, 50-in. driving wheels and a total weight in working order of 186,000 lb. The Pacific type locomotives will have 20 by 26 in. cylinders, 62-in. driving wheels and a total weight in working order of 183,000 lb.

THE MUSCATINE-IOWA CITY RAILWAY, Muscatine, Iowa, has leased the Montezuma branch of the Chicago, Rock Island & Pacific, running from Muscatine, Ia., to Montezuma, 87 miles, and proposes to operate the line with gas-electric power instead of steam. It has already begun negotiations for the purchase of the necessary freight locomotives and passenger cars. The arrangement for the lease is to become effective on January 1, 1916.

THE CINCINNATI, INDIANAPOLIS & WESTERN was incorrectly reported in last week's issue as having ordered 42 locomotives from the Lima Locomotive Corporation. The company placed orders for but 35 locomotives, the order having been divided as follows: Lima Locomotive Corporation, 8 Mikado type and 7 six-wheel switching locomotives, and the Baldwin Locomotive Works, 10 ten-wheel and 10 Consolidation type locomotives.

### CAR BUILDING

THE MISSOURI, KANSAS & TEXAS is inquiring for 2,000 coal cars.

THE BINGHAM & GARFIELD is inquiring for prices on 125 freight cars.

THE NORTHERN PACIFIC is inquiring for prices on 1,000 center constructions.

THE DENVER & RIO GRANDE is inquiring for prices on 10 steel passenger coaches.

THE MUSCATINE-IOWA CITY RAILWAY.—See item under Locomotive Building.

THE MINNEAPOLIS & ST. LOUIS has ordered 500 40-ton box cars from the Bettendorf Company.

THE MICHIGAN CENTRAL has ordered 150 40-ton box cars from the Canadian Car & Foundry Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered 400 steel cars for ties from the Haskell & Barker Car Company.

THE BIRMINGHAM SOUTHERN has issued inquiries for 50 70-ton hopper cars, 25 70-ton flat cars and 15 50-ton box cars.

THE CENTRAL OF NEW JERSEY has ordered 1,000 box, 1,000 hopper and 250 insulated box cars for ice from the Standard Steel Car Company.

THE GEORGIA, SOUTHERN & FLORIDA is in the market for two passenger coaches, 130 steel gondola coal cars and 375 steel underframe box cars.

THE CHESAPEAKE & OHIO, reported in last week's issue as being in the market for 1,000 70-ton coal cars, has ordered these cars from the Standard Steel Car Company.

THE PENNSYLVANIA EQUIPMENT COMPANY, Philadelphia, Pa., is in the market for one or two second hand caboose cars. It is also inquiring for 25 flat and 5, 30-ton box cars, for southern delivery.

THE DELAWARE, LACKAWANNA & WESTERN, reported in last week's issue as being in the market for 500 hopper cars, will also purchase 1,000 steel underframe box cars and 500 gondola cars.

THE BALTIMORE & OHIO, reported in an unconfirmed item in last week's issue as having ordered 1,000 hopper cars from the Cambria Steel Company, ordered 2,000 hopper cars from that company and has also ordered 500 box car bodies from the Ralston Steel Car Company.

THE LOUISVILLE & NASHVILLE reported in an unconfirmed item in the *Railway Age Gazette* of last week as having ordered 1,000

steel underframe box cars from the Mount Vernon Car Manufacturing Company, ordered only 1,000 steel underframes from that company and will build the cars in its own shops. This company will also build 400 gondola cars in its own shops.

THE PENNSYLVANIA has issued inquiries for 9,000 freight cars to replace old equipment. Of these 6,000 will be for the Lines East, and 3,000 for the Lines West of Pittsburgh. The company has also issued inquiries for 50 coaches, 50 combination baggage and express cars and 7 horse express cars for the Lines East and 18 coaches, 20 baggage cars, 6 dining cars and 16 combination passenger and baggage and combination baggage and mail cars for the Lines West.

THE NEW YORK CENTRAL was reported in last week's issue as having placed orders for several thousand cars. More recent advices give the division of the order as follows: Standard Steel Car Company, 4,500 55-ton composite gondola cars; Haskell & Barker Car Company, 1,500 automobile cars; Pullman Company, 1,000 automobile cars, and the American Car & Foundry Company, 1,000 automobile cars, a total of 8,000 cars. These orders are in addition to orders placed in September or early in October for 5,500 cars, only 3,500 of which have been previously reported. The orders for 5,500 cars noted included the following: Pressed Steel Car Company, 1,500 gondola cars, of which 500 were for the New York Central proper and 1,000 for the Pittsburgh & Lake Erie; Standard Steel Car Company, 1,500 gondola cars, of which 500 were likewise for the New York Central, and 1,000 for the Pittsburgh & Lake Erie; Haskell & Barker Car Company, 1,000 automobile cars, for the Michigan Central; American Car & Foundry Company, 1,000 box cars, including 500 for the New York Central and 500 for the Cincinnati Northern, and the Barney & Smith Car Company, 500 box cars for the New York Central. The orders placed for the New York Central proper were not previously reported. Of the 4,500 gondola cars ordered from the Standard Steel Car Company on the new order, 3,000 are to be for the New York Central, 500 for the Michigan Central and 1,000 for the Pittsburgh & Lake Erie. The 3,500 automobile cars to be built by the Haskell & Barker Car Company, the American Car & Foundry Company and the Pullman Company are ordered for the Michigan Central.

### IRON AND STEEL

THE NEW YORK CENTRAL has ordered 5,000 tons of rails from the Lackawanna Steel Company.

THE CHICAGO GREAT WESTERN has ordered 7,500 tons of 85-lb. rails from the Illinois Steel Company for March delivery.

THE BOSTON & MAINE has ordered 25,000 tons of rails for 1916 delivery, of which 15,000 tons have been ordered from the Lackawanna Steel Company.

THE PENNSYLVANIA RAILROAD has ordered 175,000 tons of rails for 1916 delivery, as follows: 70,000 tons from the Illinois Steel Company, 7,000 tons from the Carnegie Steel Company, 38,500 tons from the Cambria Steel Company, 38,500 tons from the Pennsylvania Steel Company, 10,500 tons from the Lackawanna Steel Company, and 10,500 tons from the Bethlehem Steel Company.

### SIGNALING

THE CHICAGO, INDIANAPOLIS & LOUISVILLE will install a 24-lever Saxby & Farmer mechanical interlocking plant at the crossing of its line with the Grand Trunk, at Haskell's, Ind. The material has been ordered from the Union Switch & Signal Company, and the work will be done by the road's forces.

THE ATCHISON, TOPEKA & SANTA FE will install an all-electric interlocking plant at Mission street, Los Angeles, Cal. The material for the installation was furnished by the General Railway Signal Company, and comprises an 80-lever, model 2, unit lever type interlocking machine, with 62 working levers and 18 spare spaces; three-position, upper-quadrant, model 2-A high signals and two-position, lower-quadrant, model 2-A high signals; three-position, upper-quadrant, model 2-A dwarf signals and two-position, lower-quadrant, model 3 dwarf signals, also model 2 switch machines. The work will be done by the road's forces.



## Supply Trade News

The American Steel Foundries will soon begin work on a new addition to its plant at Indiana Harbor, Ind. A structure 320 ft. by 200 ft. will be erected.

M. E. Hamilton, northwest railroad representative of the Garlock Packing Company, of Chicago, with headquarters at St. Paul, Minn., has resigned to become general air brake inspector of the St. Louis & San Francisco. Mr. Hamilton was in the service of the Garlock Packing Company for four and one-half years.

The Chicago Railway Signal & Supply Company opened two new branch offices, on October 15, one located at 407 Confederation building, Winnipeg, Man., and the other at 320 Kearns building, Salt Lake City, Utah. W. Reynolds will have charge of the company's Canadian interests, and C. H. Jones will act as representative for the western district, centering at Salt Lake City.

William H. Donner, president of the Cambria Steel Company, has exercised an option for one-half the Pennsylvania company's holdings in the Pennsylvania Steel Company, and has purchased approximately 45,800 shares of 7 per cent non-cumulative preferred and 46,950 shares of common stock. This means that the proposed purchase of the Pennsylvania Steel Company by the Bethlehem Steel interests cannot take place and paves the way for the contemplated merger of the Pennsylvania and Cambria Steel Companies.

## TRADE PUBLICATIONS

**LOCOMOTIVE APPLIANCES.**—The Franklin Railway Supply Company, New York, has recently issued Bulletin No. 166, describing and illustrating the Franklin automatic adjustable driving box wedge.

**HORIZONTAL GAS ENGINES.**—The National Transit Company, Oil City, Pa., has issued Bulletin No. 403, describing its horizontal gas engines ranging from 30 to 80 h. p. The book is illustrated with photographs and drawings of the various parts.

**SCHERZER ROLLING LIFT BRIDGES.**—The Scherzer Rolling Lift Bridge Company, Chicago, has issued a booklet describing its type of bridges and the merits of this design. It also contains an extended list of this type of bridges on various railways in the country. The book is well illustrated with examples of typical structures.

**KAHN MESH FOR REINFORCING CONCRETE.**—The Trussed Concrete Steel Company, Youngstown, Ohio, has issued a 32-page pamphlet describing Kahn mesh expanded metal. The booklet illustrates the various purposes for which this material may be used and gives a number of slab tables. Several standard plans for highway box culverts are also included.

**CEMENT AND CONCRETE.**—Robert W. Hunt & Co., engineers, Chicago, have issued a booklet containing information and specifications concerning the testing of cement and concrete aggregates, including the standard specifications for Portland cement adopted by the American Society for Testing Materials and approved by the American Society of Civil Engineers.

**INSPECTION AND TESTS.**—The engineering firm of Robert W. Hunt & Co., Chicago, has recently issued a booklet explaining the work of the engineering division of that company's bureau of inspection, tests and consultation. The book goes into some detail concerning the aims of the organization and the duties of its various departmental sub-divisions. The company is prepared to make examinations and reports on public utilities, power plants, industrial plants, etc. It may also be called upon for consultation and designing with reference to power plant design, industrial plants, and railway equipment. Its construction and testing department, in addition, is in a position to supervise the construction of power and other plants and to supervise also tests of electrical and mechanical apparatus at the manufacturer's works or at the plant after installation.

## Railway Construction

**BELLINGHAM, MT. BAKER & SPOKANE.**—The contract for the first 16 miles of this railway—from Bellingham, Wash., to Deming, has been awarded to E. J. Fader, 4175 Arcade Annex, Seattle, Wash. The maximum grade on the first 16 miles is 1 1/10 per cent, but as yet grading has not been begun. Ultimately, it is the purpose of the company to extend from Deming, up the north fork of the Nooksack river, across the mountains to the headwaters of the Methow river, down the Methow to the Columbia river, along the Columbia to the Spokane river, thence to Spokane, and finally to the state boundary line. Steam motive power will be used. President, J. E. Morrison, 1515 Tenth avenue, West Seattle, Wash.; chief engineer, C. E. Wingate, McLeod hotel, Bellingham, Wash.

**BOSTON SUBWAYS.**—Bids are wanted until November 11, by B. Leighton Beal, secretary of the Boston Transit Commission, for building section G of the Dorchester tunnel. This section is located in Dorchester avenue between West Fourth street and Old Colony avenue, South Boston, Mass. The section is about 1,200 ft. long and will be mainly of reinforced concrete construction.

**GULF, TEXAS & WESTERN.**—According to press reports arrangements are being made to build extensions of this road, which is now in operation from Mineral Wells, Tex., to Seymour, 108 miles. It is understood that an extension will be built from Salesville east to Fort Worth, about 50 miles, and the original intention to extend the road west from Seymour to Lubbock will also be carried out in the near future.

**LINVILLE RIVER.**—Construction work is reported under way on the extension of this road from Montezuma, N. C., northeast to Foscoe, 12 miles. A contract was let last July to W. S. Whiting, Elizabethton, Tenn., to carry out this work. The company now operates a 14-mile line from Pineola northwest via Montezuma to Cranberry. (July 9, p. 81.)

**RHODE ISLAND ROADS.**—Plans are being made for a proposed municipally owned line in Providence, R. I., to be built from the city sea wall at Field's Point to connect with the tracks of the New York, New Haven & Hartford and the Southern New England.

**SAN FRANCISCO, CAL., ROADS.**—The Board of Public Works of this city will receive bids on November 24 for the construction of a railway from Rosasco, Tuolumne county, to the Hetch-Hetchy dam site. The railroad will be 67.7 miles in length, will have a maximum grade of 4 per cent, and a maximum curve of 30 deg. About 16,000 cu. yd. of material will be handled per mile. One bridge, 220 ft. long will be built over the Tuolumne river, involving the use of 470,000 lb. of steel for the structure itself and 130,000 lb. for girder approaches. The railway will be used to transport material to the site of the Hetch-Hetchy dam and the aqueduct leading from it. Steam motive power will be used, but as yet no definite inquiries for equipment have been made. The plans also contemplate the construction of oil tanks, water tanks and 50 miles of telephone line. M. M. O'Shaughnessy, city engineer, San Francisco, Cal.

**VAN HORN VALLEY.**—Grading is in progress on this road from Van Horn, Tex., north. Three thousand cu. yd. of material is being handled per mile. Out of some 70 miles of grading to be done, 15 per cent has been completed. R. H. Owen, 816 Reserve Bank building, Kansas City, Mo., is president.

## RAILWAY STRUCTURES

**ARGENTINE, KAN.**—Plans are being prepared by the Atchison, Topeka & Santa Fe for a large frame addition to the car repair shed here. The new structure will be 522 ft. by 93, and will cost approximately \$45,000.

**BRONXVILLE, N. Y.**—A contract has been given by the New York Central to the Fort Pitt Bridge Works, Pittsburgh, Pa., for fabricating the steel superstructures of a 63-ft. railroad bridge, also for a highway bridge about 62½ ft. long. These

bridges are to have concrete abutments. This is part of the improvements being carried out in connection with the construction of a new street at Bronxville. Bids were received in September for the excavation, masonry, paving, erection of the steel work, etc., but contracts for this work have not yet been let.

**BROOKLYN, N. Y.**—The New York Dock Company will carry out improvements on the Brooklyn waterfront between Fulton street and Atlantic avenue at a cost of \$1,250,000. The work calls for the replacement of the existing piers, which are about 400 ft. long, by five new piers, to be from 640 to 750 ft. long.

The New York Municipal Railway Corporation has applied to the New York Public Service Commission, First district, for permission to enter into a contract with the George W. McNulty Company, for the construction of the Coney Island terminal of its elevated lines.

**BUFFALO, N. Y.**—An officer of the Delaware, Lackawanna & Western writes that the company will reconstruct its lake coal trestle at Buffalo. Some of the work will be done by the railroad with company forces, and the Buffalo Dock & Dredging Company will probably carry out the work at North Pier, Buffalo.

**EAST ST. LOUIS, ILL.**—A contract has been awarded to the Weller Manufacturing Company, of Chicago, Ill., for the machinery and structural steel to be used in the construction of a coal tippie for the Wiggins Ferry Company. The work of installation will be done by company forces. The coal transfer will be operated by a tram car on a cable way actuated by electric hoists. The hopper trestle and motor house will be constructed of timber; the hopper, tram car and cradle of steel. The new station will have a capacity of 150 tons per hour, and will cost approximately \$11,500, exclusive of the earth approach to the hopper trestle. (October 29, p. 829.)

**JAMAICA, N. Y.**—Work is now under way on the elevation of about a mile of the Long Island Railroad tracks through Hollis and over the Holban freight yard. About 400,000 cu. yd. of fill will be used. The grade crossings at Farmer avenue and at Hamilton avenue will be eliminated and the grade of the entire Holban freight yard will be changed, so as to permit of the highway going between the network of tracks in the yard. The three-track main line traversing this section will be raised 14 or 15 ft., and the highways will be depressed 3 or 4 feet. The cost of the improvements will be about \$400,000.

**PHILADELPHIA, PA.**—In connection with the opening of Emerald street under the tracks of the Richmond branch of the Philadelphia & Reading, a three-span deckbridge is to be built by the railroad, to carry 16 tracks, at a cost of \$72,800. The bridge will be supported on concrete masonry abutments at the house lines, and upon steel girders and columns at the curb lines of the street. The bridge floor proper is to be composed of I-beams encased in concrete and will be waterproofed with a layer of asphalt mastic 1½ in. thick. Contracts for the work have been let as follows: For the bridge abutments and removal of core to C. P. Bower, Philadelphia, Pa.; for the superstructure of the bridge, ready for encasement, to the American Bridge Company, Philadelphia, and for waterproofing the bridge, to the Barber Asphalt Paving Company, Philadelphia.

**SOUTH BEND, IND.**—This municipality has been granted the authority to order grade separation on the New York Central right of way and at present is raising funds to cover its share of the expense. No definite plans of construction have yet been adopted.

**ST. LOUIS, MO.**—The contract for constructing the Chouteau avenue viaduct over the Missouri Pacific and St. Louis & San Francisco tracks, has been let to F. C. Mueller & Co., of this city. The viaduct will be a reinforced concrete structure, consisting of 30 flat slab spans, 28 to 36 ft. in length, supported on piers extending to rock foundation. The estimated cost of the structure is \$150,000; pavements and surface improvements, \$35,000; real estate, \$35,000; property damages, \$45,000. The railways and the city will share the cost as follows: Missouri Pacific, \$150,000; St. Louis & San Francisco, \$35,000; street railway, \$10,000; city of St. Louis, the balance.

**SUNBURY, PA.**—The Philadelphia & Reading has filed plans with the Pennsylvania State Water Supply Commission for permission to reconstruct its bridge across the Susquehanna river at Sunbury. (Sept. 24, p. 586.)

## Railway Financial News

**BOSTON & MAINE.**—The minority stockholders' protective committee has sent out a circular protesting against the proposed reorganization. The circular says, in part:

"Boston & Maine was valued by the commonwealth of Massachusetts as late as 1906 at \$165 per share, and the question arises as to the bearing of this valuation upon present conditions. To what extent have real values suffered legitimate depreciation? Total sales of the stock in the intervening period have been exceedingly small; fluctuations in this limited market cannot properly be used as a barometer of credit in connection with the outstanding obligations of this corporation.

"Boston & Maine as a physical property has substantially appreciated rather than depreciated within the past few years. Recent earnings would seem to refute the claim that a reorganization is immediately necessary and tend to make the suggestion of receivership a more or less empty threat. The position taken by the Interstate Commerce Commission in the Rock Island case may be regarded as a fair warning that merely speculative railroad receiverships will not be tolerated.

"Such reorganization as is projected would permanently fund a large volume of obligations that are declared to be of doubtful validity. It also particularly threatens the integrity of minority interests, for the reason that it would mean an assessment of from \$30 to \$50 per share on all the stock. The result would be the wiping-out of thousands of individual holdings. All stock of the Boston & Maine has been issued under specific guaranty of general law that it should forever remain unassessable."

**CHICAGO GREAT WESTERN.**—The directors have declared a dividend of 1 per cent on the preferred stock, payable December 1. This is the first dividend declared since the reorganization of 1909. Dividends on the preferred stock have been cumulative at the rate of 4 per cent a year since June 30, 1914.

**CHICAGO, ROCK ISLAND & PACIFIC.**—The Montezuma branch, running from Muscatine to Montezuma, Iowa, 87 miles, has been leased to the Muscatine-Iowa City Railway, which proposes to operate the line with gas-electric cars for both passenger and freight. The arrangement becomes effective on January 1, 1916.

**CHICAGO, ROCK ISLAND & PACIFIC.**—As previously announced, the protective committee, Charles A. Peabody, chairman, representing the refunding 4 per cent bonds, has asked for the deposit of these bonds. N. L. Amster, of Boston, has given out a statement criticising the committee for their "attack" on the credit of the company just at this time. It is understood that the Kendrick report on the capital needs of the property to put it in good physical shape is about ready, or has just been submitted, and the committee's action in calling for the deposit of bonds is said to be because of the nature of this report. This cannot, however, be confirmed.

**HOUSTON & BRAZOS VALLEY.**—On the application of general creditors Judge Burns of the United States district court has appointed G. C. Morris receiver of the Houston & Brazos Valley, which runs from Anchor, Tex., to Freeport, 25 miles.

**NATIONAL RAILWAYS OF MEXICO.**—The stockholders' meeting was held in Mexico City on October 31. The Mexican and New York boards of directors were elected. The Mexican board consists of Acting Foreign Minister Jesus Acuna, Carlos Basove y del Castillo, Minister of Finance Luis Cabrera, three lawyers, Jose Diego Fernandez, Aquiles Eloduy and Fernando Gonzales; Gabriel Mancera, an engineer; sub-Secretary of Finance Rafael Nieto, Alberto J. Pani, an engineer; Jose Simon, manager of the Banco Nacional Mexicano, and Rafael Zubaran Capmany, ex-minister of the interior. The New York board consists of Juan N. Amader, an attorney; Dr. Alfredo Caturmeli, William Edmund Curtis, Jerome Hanauer, Roberto V. Pesquera, Walter F. Losen, Charles H. Sabin, Richard Schuster and Henry Wehrhane.